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AN IMPROVED LAND REGISTRATION SYSTEM FOR ONTARIO: AN EXECUTIVE SUMMARY OF THE DESIGN CONCEPTS AND RECOMMENDATIONS

DEPOSITORY LIBRARY MATERIAL

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AN IMPROVED LAND REGISTRATION
SYSTEM FOR ONTARIO:
AN EXECUTIVE SUMMARY OF THE DESIGN
CONCEPTS AND RECOMMENDATIONS

PROPERTY RIGHTS DIVISION
POLARIS PROJECT
APRIL 1977 - MARCH 1979

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AN IMPROVED LAND REGISTRATION SYSTEM FOR ONTARIO

VOLUME 1:

EXECUTIVE SUMMARY OF THE DESIGN CONCEPTS AND RECOMMENDATIONS

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I

INTRODUCTION

For almost 200 years, the Province of Ontario has provided a land registration system to protect interests in land. Common law, legislation and regulations have created security in land ownership. Local offices have been established to register information on land ownership and land interests. There are now 65 offices across the Province where these records are maintained and can be viewed by the public.

A. ONTARIO LAW REFORM COMMISSION, REPORT ON LAND REGISTRATION (1971)

The Ontario Law Reform Commission, in its report on land registration, acknowledges that "existing systems have given reasonable security for the ownership of interests in land, and reasonable scope and security for creation and transfer of these interests". However, the report also states that "comprehensive reform of the arrangements for land registration in Ontario is urgently needed". The Commission felt that "the existing arrangements have worked only because they have been made to work by the continuous care of lawyers, surveyors and civil servants, at a considerable cumulative cost".

The Law Reform Commission makes many recommendations for change. The major recommendations are:

- an improved land titles system should be the sole system for land registration in Ontario;
- with limited exceptions, claims against land should be registered to be effective;
- a coordinate control system should be established and used for indexing parcels and to record the location of monuments; and
- a computer system should be used for land registration.

The Ministry of Consumer and Commercial Relations created the Land Registration Management Committee (L.R.M.C.) in September, 1972 to develop a position regarding these recommendations. From 1973 to the present, project teams completed studies relating to the legal, survey and systems aspects of land registration. The provincial systems and those of other jurisdictions were studied.

Improvements in land registration can be made. The challenge is to select changes or improvements which are both beneficial and practical. The ultimate objective must be improved service to the public at a cost government can afford.

Reform and improvement of the land registration system has occurred continuously since passage of the first Registry Act. The task of this report is to define the changes required now and in the future. To achieve a proper balance between change and stability requires an understanding of the developments leading up to the current situation.

B. THE DEVELOPMENT OF LAND REGISTRATION IN ONTARIO

In Ontario law there are two major categories of property:

- real property; and
- personal property.

Land is classified as real property. Crown land is owned by the Province. Patented land is owned by individuals. All patented land is now governed by either the registry system or the land titles system.

The registry system is the older of Ontario's land registration systems. The first Registry Act was passed in 1795. It provided for government storage and safeguarding of title documents. This is still a central feature of the current system.

Ontario's first Land Titles Act was passed in 1885. Essentially, it provides a guarantee of title in addition to the storage and safeguarding function.

Most patented land in the Province is governed by the registry system. Settlement in northern Ontario took place largely after 1885 and the use of the land titles system was then compulsory. Thus, most of its area is governed by that system. The land titles system has gradually been made available in much of southern Ontario including most major urban areas and growth centres.

Theoretically, both systems are available throughout the Province. However, there is little registry system activity in the north. The land titles system is still unavailable in many rural counties in southern Ontario.

The registry system abstract index is simply a record of all registered and deposited documents. It is a guide to locating the documents. The documents themselves must be examined to determine their legal effect and the state of the title.

In contrast, the land titles parcel register is a statement of title. However, the parcel register gives only the most important terms of most documents. Therefore, lawyers will usually examine all documents that have not been superseded.

In the land titles system, the legal effect of a dealing is confirmed when the entry in the parcel register is signed. Superseded entries are deleted. The register always reflects only current ownership and encumbrances. The registry system provides only an historical record of dealings with the land. No attempt is made to rule on the validity of documents and plans that appear to supersede others. As a result, prior documents and plans cannot be ignored.

The need to examine documents to determine that they are no longer effective is one of the major disadvantages of the registry system. This inconvenience has been reduced in two principal ways:

- the 40-year search limitation period established in Part III of The Registry Act; and
- the barring of certain claims against land after a discharge has been registered for a given number of years.

The registry system is simpler and less costly to administer. The search process may, at times, be difficult but registration is efficient and straight-forward. Land titles system searches are generally uncomplicated. However, registration may be a lengthy and frustrating process in large offices during high volume periods.

Registry system registration requirements are straight-forward and well understood. Land titles system requirements are more complex. Often, the acceptability of a document presented for registration is at the discretion of the land registrar. This creates an air of uncertainty and can lead to conflicts between the system user and office staff.

These basic differences in the two land registration systems are significant. They must be considered in the analysis and selection of land registration system improvements.

C. A SUMMARY OF PRIOR WORK

The discussion and proposals of the Ontario Law Reform Commission report were, by necessity, somewhat general. The preparation of detailed recommendations and an implementation plan was left for the administration immediately responsible for land registration. Detailed analysis of the Province's land registration needs began in 1972.

This report draws heavily on the experience and insight gained from these prior studies.

One of the first projects assembled and catalogued an inventory of available land registration information. Land registration systems are undergoing change world-wide. This study accumulated documentation of current land registration practices and established the location of other jurisdictions which had, or were developing, systems of interest to the Province.

A project was set up to provide a directory and catalogue of the many mapping agencies in Ontario, particularly those with an interest in property mapping. It is hoped that this will lead to a provincially coordinated property mapping process that will, in turn, lead to a more efficient mapping process and reduction in duplicated effort.

A detailed questionnaire was sent to 117 land registration jurisdictions. Discussions with representatives of jurisdictions in the United States, Canada, Sweden, West Germany, England, South Africa and Australia as well as attendance at international conferences related to land registration promoted the sharing of information with other experts on an international level.

A number of detailed reports regarding legal, survey and systems aspects of land registration were also prepared. These studies and the experience of other jurisdictions helped:

- identify the options available; and
- assess their benefits and drawbacks.

One major task remained. An in-depth analysis of the Province's current land registration system was required.

II

THE PROVINCE'S CURRENT LAND REGISTRATION SYSTEM

An understanding of present practice is necessary to determine the required changes to land registration arrangements. There are three major areas that must be discussed.

- the local land registry offices operating under the land titles, registry or both systems;
- head office functions which monitor or support the activities of the local offices; and
- the users of the land registration system.

The basic operation of the land registration system is illustrated in Figure 1, page 6.

A. THE LOCAL LAND REGISTRY OFFICES

The Ministry of Consumer and Commercial Relations maintains land records in 65 local land registry offices across the Province. Each local office has three main functions:

- registering documents and plans; (see Figure 2, page 7)
- storing and maintaining documents and plans; and
- making available, upon request, the information contained in registered documents and plans.

About 70% of Ontario's 3,100,000 parcels of land are recorded under the registry system. The remaining 30% are registered under the land titles system. Of the 65 land registry offices in Ontario, 32 operate strictly under the registry system, two operate strictly under the land titles system and the remaining 31 offices operate under both systems. Local office activities common to both the registry and land titles systems include:

- title searching;
- maintaining records;
- microfilming records;
- providing photocopies; and
- preparing reports.

The remaining local office activities depend upon whether the land titles or registry system is being used. For some activities, registry and land titles procedures differ. This is the case for:

FIGURE 1

THE BASIC LAND REGISTRATION SYSTEM.

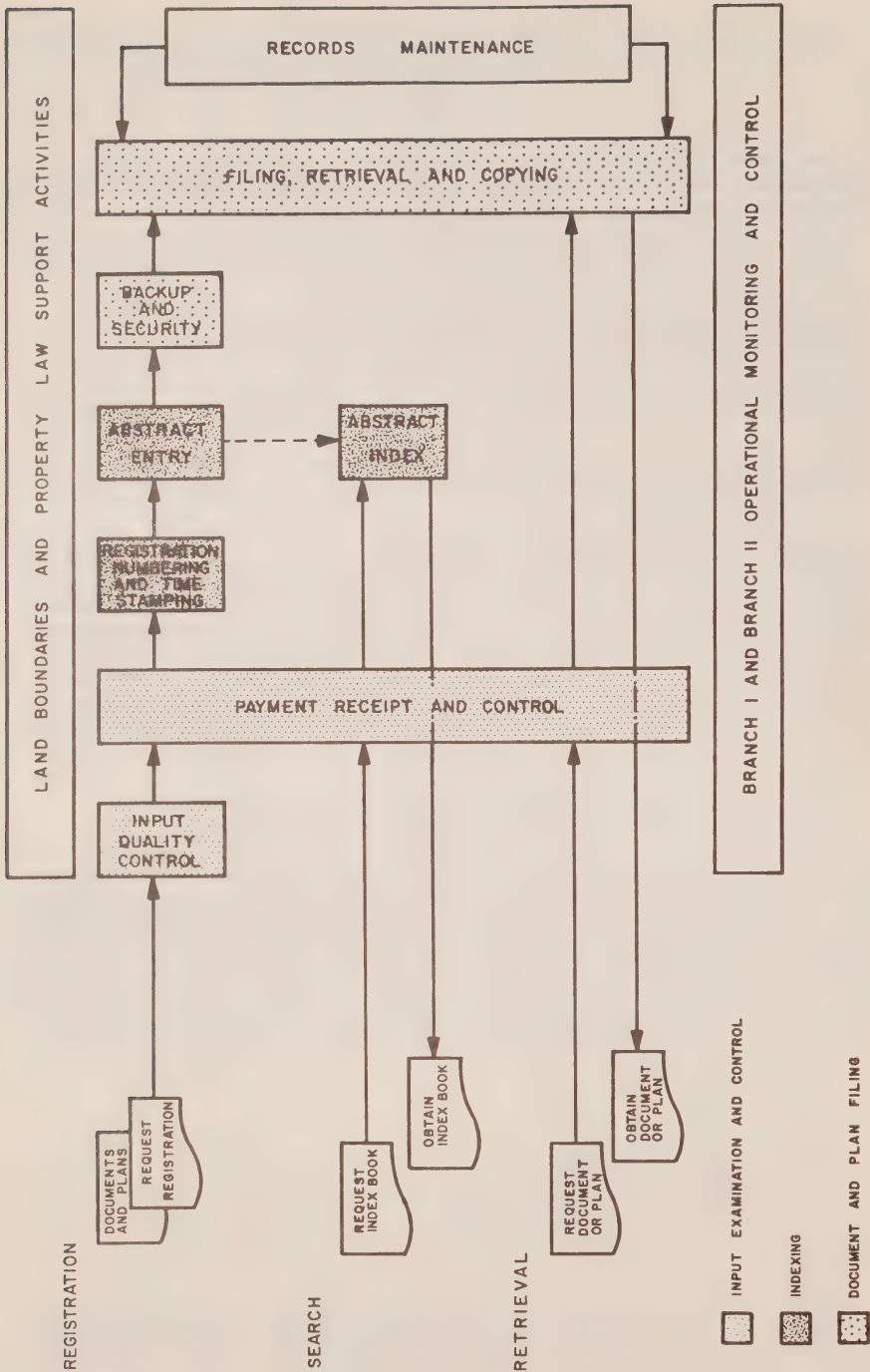
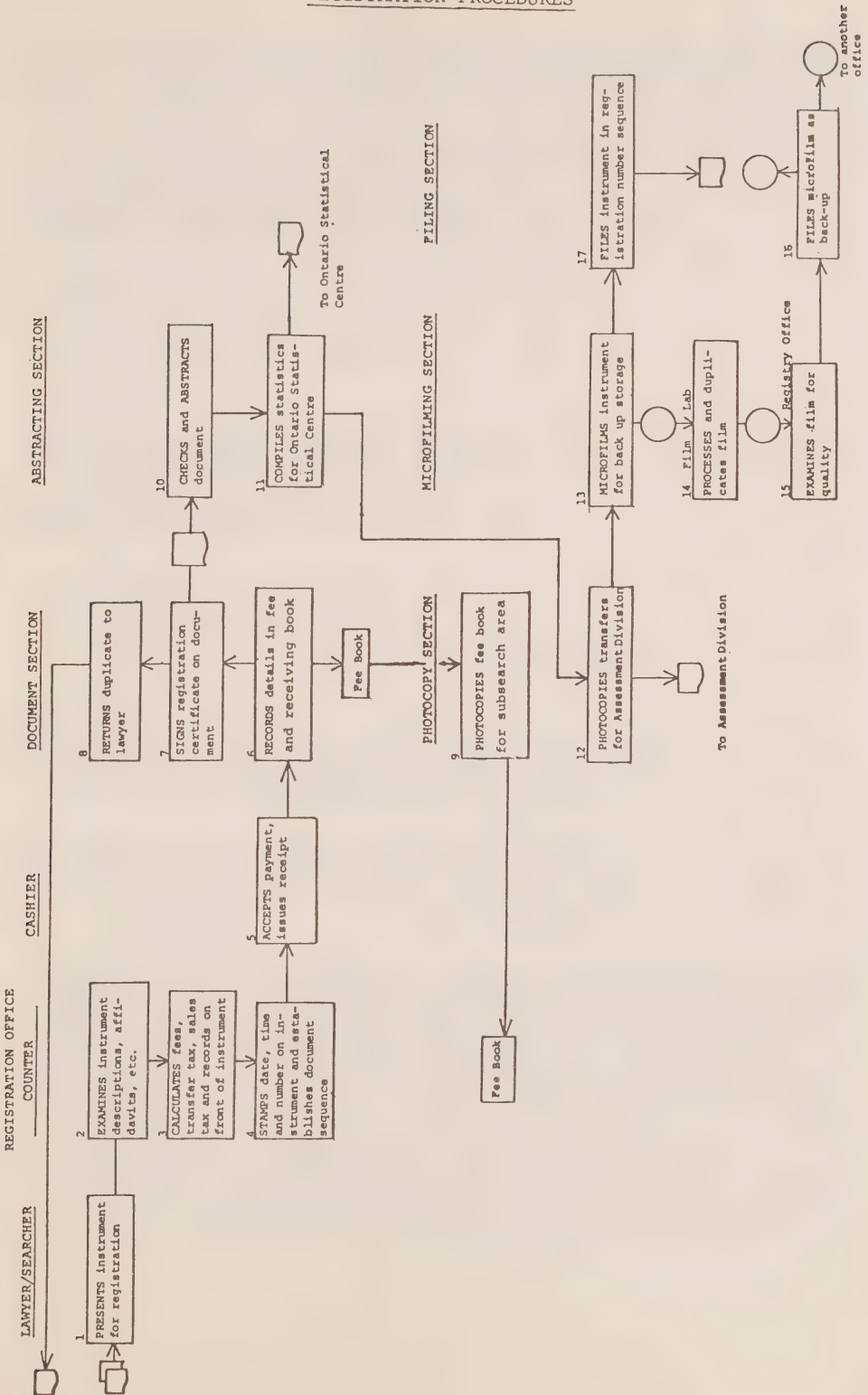


Figure 2

FLOWCHART OF INSTRUMENT
REGISTRATION PROCEDURES



- document registration;
- plan registration; and
- the abstracting of documents and plans.

Other activities are unique to one system or the other. Preparation of registrar's abstracts and Registrar's Compiled Plans is done only in the registry system. The land titles system has the following unique activities:

- maintaining writs of execution;
- processing first applications; and
- holding hearings.

The majority of local office time is spent registering, abstracting and providing information from the files. Registration and provision of information involve dealing with the public at the front counter. Abstracting takes place behind the counter. A brief description of these activities follows.

Both documents and plans must be examined and approved before registration. Registry system plans are examined by local office plan examiners. Land titles plans are examined by Land Boundaries Program staff.

Document examination is performed entirely in the local office. Under both systems, staff ensure that the document meets all statutory requirements, particularly those relating to required signatures and affidavits. The document must also contain a proper legal description for the land parcel.

In land titles, the relevant parcel register is retrieved and the document checked for legal effectiveness against the recorded title. For many registrations, the writs of execution file is also searched.

After collection of the applicable fees and taxes, plans and documents are assigned registration numbers. In the land titles system, registration does not become effective until the abstract entry in the parcel register is signed. This may be days after acceptance for registration. Registry system documents are registered at the time the registration number is assigned and fees paid.

Parcel registers, in the land titles system, and abstract indexes, in the registry system, are used as index books. Pertinent information from plans and documents is recorded in the books.

Land titles parcels, condominium units and recent subdivision plans usually have separate, individual records in the index books. However, many registry system abstract indexes are not organized this way. Often, a single page in the abstract index will contain references to many land parcels. Therefore, identifying all documents or plans relating to a specific land parcel may require searching through a number of pages in the abstract index. It may also require examination of many documents or plans which do not affect that parcel.

Individuals attempting to deal with land rely upon the currency and accuracy of the index books. Therefore, abstract entries are usually checked by senior staff members. At that time, parcel register entries are signed and land titles system registrations become effective.

Provision of information from local office records involves retrieval of documents, plans or index books as required by system users and subsequent refiling. This is a relatively straight-forward clerical task.

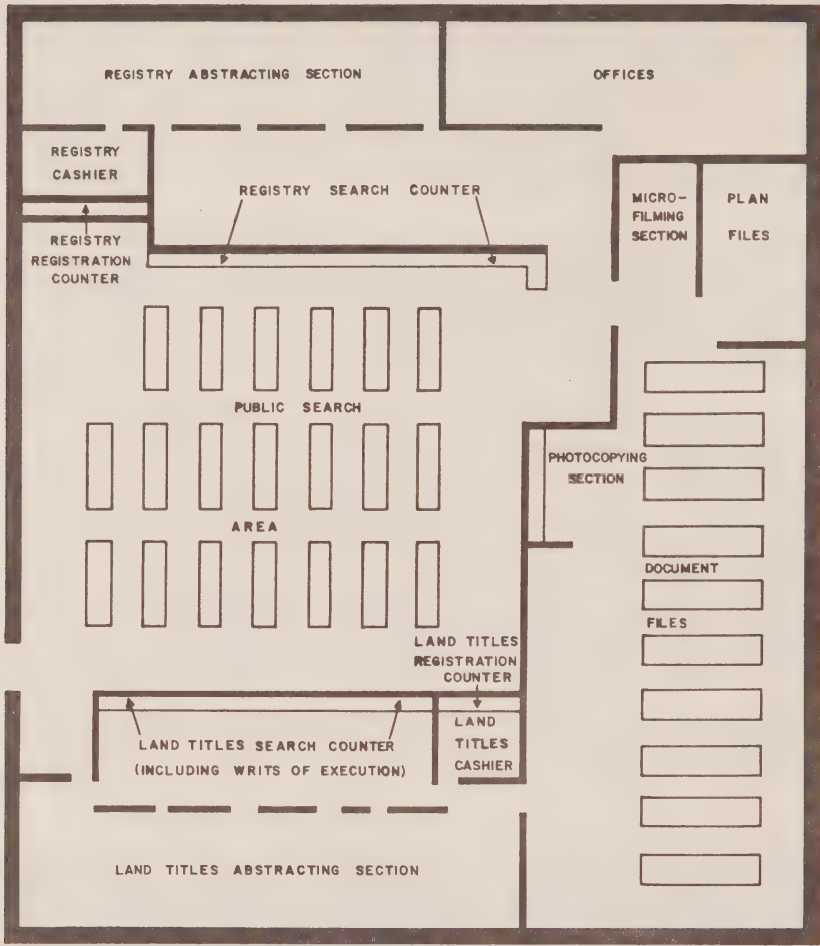
Local office staff may also:

- prepare registrar's abstracts, a title search of registry system records certified by the land registrar;
- prepare Registrar's Compiled Plans, so that new pages can be opened for individual land parcels in the registry system;
- maintain the land titles writs of execution file, for new writs received from the local sheriff's office and deletion of expired writs;
- process first applications, in order to transfer land from the registry system to the land titles system; and
- hold hearings, in the land titles system only.

Offices vary in size depending upon the volume of information stored and the registration activity. Most operate on one floor. Some utilize the basement or another floor in the same building for additional filing space. However, the physical characteristics of most offices are similar. A sample layout is shown in Figure 3, page 10. Both a land titles and registry system section are shown. Of course, both areas are present only for those offices operating both systems.

The major physical components may vary slightly from office to office. Generally, they include the following:

FIGURE 3—FLOOR PLAN FOR A LAND REGISTRY OFFICE



- a registration counter, where documents and plans are examined and accepted for registration;
- a search counter, where title searchers obtain abstract index books, parcel registers, documents and plans;
- one or more cashiers, where payment for registration, searching and other services is tendered;
- a public area, containing a number of search tables where system users can examine index books, parcel registers, documents and plans;
- a document filing section, where documents are stored;
- a plan filing section, where plans are stored;
- a photocopying section, to duplicate documents and other materials;
- an abstracting section, where office staff enter information from registered documents and plans into abstract index books or parcel registers;
- a microfilming section, where a camera microfilms documents for security and back-up purposes; and
- an executions section, (only in land titles offices) where staff searches for writs of execution are performed.

Most local office activities are clerical and at a low level of mechanization. Standard office equipment such as typewriters, photocopiers and cash registers are used. Computer-related equipment and automatic processes are not. There is considerable variation in procedure among offices. Larger offices usually have greater specialization of functions. All offices operate with considerable autonomy.

Office activities are heavily dependent on paper records and ledger books. Filing and retrieval methods are almost totally manual. Microfilm records are used, but, except in the Toronto and York South office, only as security back-up to the paper system.

Both documents and plans are filed in registration number sequence. Reproducible copies of plans are kept by the office staff. White print copies are available for sale to the public. The risk of loss or alteration of most plans is minimal.

This is not the case with documents and index books. After an original document has been microfilmed, it is filed in registration number sequence and provided to the public

for search purposes. Lost documents may be replaced from the back-up microfilm or from copybooks. Altered documents would usually not be detected upon their return.

Original abstract indexes and parcel registers are also provided to the public. However, there is no duplicate of most index books. Lost books or pages cannot easily be replaced. Altered books or pages would not immediately be detected.

Most local offices have some sort of security and control system to safeguard against loss or theft. The most common procedure is to retain a copy of a multi-part requisition form (used to obtain documents and books) at the search counter. Documents and books are checked off against the form upon their return.

There is only one copy for public use of most documents and books. Once issued, they may often be in use for hours rather than minutes. Until returned to their proper filing locations, they are generally unavailable to other users. Since both office staff and the public use these records, conflicts and delays often result.

Registration and related fees are always paid at the time of registration. The method and sequence of search fee payment varies from office to office. In some offices, payment is required before books and documents are given out. In other offices, fees are paid after services are performed. If another provincial agency is involved, no cash payment is made. Rather, the value of the service performed is recorded by name and account number. This, and other information, is subsequently used to prepare local office reports.

In total, 11 reports and forms are prepared regularly in the local office. These are:

- a daily reconciliation sheet for cash balancing;
- a weekly activity report showing registration activity and the backlog of work in process;
- a weekly interim statement of fees and tax summarizing each day's bank deposits, fees, land transfer tax and retail sales tax collections;
- a monthly return showing registration activity, fees, tax and backlog information;
- a monthly condominium control sheet showing the number and type of condominium units registered;

- a monthly control sheet showing services supplied to the Ministry of Revenue, the Ministry of Transportation and Communications and other provincial agencies;
- a quarterly return summarizing each quarter's registration activity and related fees;
- an annual return as a consolidation of the prior quarterly returns;
- a monthly land speculation tax clearance report indicating the land speculation tax lien clearance certificates received;
- a monthly accumulation of chattel exemption certificates; and
- land transfer tax undertaking forms, with a copy of the registered document.

A number of internal reports contain duplicate information. Preparation of reports requires many staff man-hours each month.

B. HEAD OFFICE ACTIVITIES

The Provincial Property Registrar is responsible for administration of the Province's land registration system. A number of head office activity areas have been set up to assist in this. Figure 4, page 14, shows the current organization chart for the Property Rights Division.

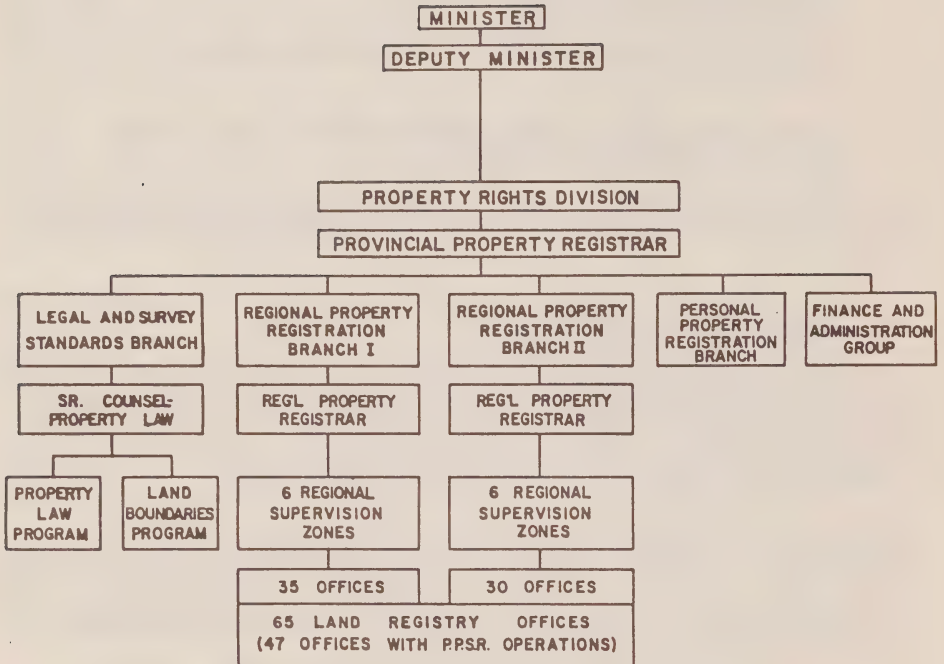
There are two regional property registration branches. Branch I is responsible for 35 land registry offices; Branch II for 30. Each branch has appointed its Deputy Director and five land registrars to act as regional supervisors and assist in supervision of the local offices. Branch I and Branch II head offices are responsible for:

- ensuring that the offices are properly managed;
- ensuring that acceptable levels of service to the public are maintained; and
- determining that operating procedures are in accordance with statutory and regulatory requirements.

A major objective is to ensure that each local office is current in recording registered documents. A guideline of three days maximum backlog has been established. All offices are monitored for concurrence with this guideline.

FIGURE 4

CURRENT ORGANIZATION CHART
PROPERTY RIGHTS DIVISION



Whenever possible, remedial action is taken to reduce backlog in an office. A regional supervisor will monitor the situation to ensure that improvement does take place. On an on-going basis, record maintenance, staff training, internal audit and quality control reviews are conducted by Branch I and Branch II head offices.

Two other head office groups also exist. The Property Law Program is responsible for legal interpretation of the five Acts administered by the Division. It supports local offices in carrying out the requirements of those Acts and in processing various applications such as:

- First Applications;
- Applications for Certificates of Title; and
- Condominium Approvals.

Staff lawyers also deal with the wide variety of legal problems which may occur during the registration process. Quality control staff regularly visit local land registry offices to monitor the quality of legal work and effect correction or improvement if necessary.

The Land Boundaries Program deals with legal surveys, plans and descriptions. All survey plans entering the land titles system are examined and approved by Land Boundaries Program staff. It provides training and guidance to local office plan examiners who examine plans entering the registry system.

Plan examination and field examination for all special applications are handled by Land Boundaries Program staff.

C. LAND REGISTRATION SYSTEM USERS

The land registration system exists to offer an efficient and effective service to its users. The primary users of the system are:

- the general public;
- the legal profession;
- the survey profession; and
- the agencies or organizations requiring access to large volumes of land information.

Land registration information and records are considered to be part of the public domain. All members of the public have access to the information within the system. However, the majority of the public is unaware of the system or how it

operates. The technical expertise of the surveyor is required to define property boundaries. Conveyance of property and protection of title interests normally requires the expertise of a lawyer.

Lawyers and their title searchers are by far the heaviest users of the land registration system. The majority of this results from a lawyer acting for a land purchaser. The two primary purposes for which the lawyer makes use of the system are:

- title searching; and
- document registration.

In title searching, the lawyer uses the system's index books to identify documents which may affect the property. In the land titles system, this is relatively straight-forward. Only the current entries in the parcel register need to be examined.

If the property is part of a lot in the registry system, the lawyer must analyze all the entries and sometimes many of the original documents to determine which documents affect the property. The search also extends back for at least 40 years. Thus, the search may involve:

- searching back through a succession of books;
- searching in various places in one book; and
- analyzing hundreds of entries to identify the few documents which will have to be examined.

After obtaining information from the land registration system, the lawyer must consult other files located elsewhere. As well, all necessary affidavits and clearances must be obtained before registration.

Usually, the lawyers for all concerned parties will attend at the land registry office to close the transaction and register documents. Registration by mail is possible, but is common only in northern Ontario.

Prior to registration, the lawyer subsearches the index books and the fee and receiving book to bring his previous search up-to-date. Assuming all is in order, he hands the documents to a registration clerk. The clerk examines the documents to ensure compliance with registration requirements.

In the land titles system, documents are also compared with the entries in the parcel register. A pencil notation in the parcel register is made at that time. Formal parcel register

entries are made later. If review prior to signing the entry indicates that a document was accepted in error, the document can be returned and the entire registration process nullified.

This is not the case in the registry system. Documents are registered at the time fees are paid and a registration number assigned. In both systems, duplicates of registered documents are returned to the lawyer if they have been provided.

The surveyor performs two major functions on behalf of his client:

- the establishment of boundaries and descriptions for newly created parcels of land; and
- the re-establishment of boundaries and descriptions for parcels which already exist.

Boundaries and descriptions are created during the consolidation or subdivision of land. These boundaries are registered and stored in the land registration system in the form of plans and descriptions.

The need to establish boundaries may result from several conditions:

- to replace unsatisfactory verbal descriptions;
- to resolve disputes regarding boundaries; or
- through the often mandatory first application or certification of titles procedures prior to proceeding with subdivision of land.

In order to re-establish a boundary line, the surveyor often has to retrieve previous survey information from the land registration system. Since a boundary remains in its original position regardless of changes in ownership, this may mean having to search back to the original Crown grant.

In every case, boundaries are established based upon the surveyor's opinion and the best evidence available to him at the time. Surveyors do not have authority to settle matters of boundary. Administrative review of survey work through plan examination and hearings is an integral part of the system. Even if adjoining owners agree with a surveyor on the proper placement of a boundary, the administrative processes, although shortened, are still required.

Usually, the general public, lawyers and surveyors deal with individual or small groups of land parcels. Other users deal with large volumes of information and large numbers of land parcels. These bulk users of land information can generally be identified as:

- all agencies who maintain duplicates of some of the land registration system property records. This includes housing, development, surveying, engineering, mapping, planning and environmental control agencies;
- utility and transportation agencies whose projects require massive amounts of information related to land use, ownership and boundaries;
- tax assessment and real estate agencies that must continually update their ownership and land records; and
- market survey agencies who collect, organize and distribute statistical information on land use, ownership and values of mortgages.

At present, bulk users must use the land registration system in the same manner as a user interested in only a single parcel record. Multiple parcel projects must be searched one parcel at a time. This often causes difficulty and delays for all users in obtaining plans, documents and photocopies.

Many bulk users require abstracted property information. For them, it is less time-consuming to purchase the information through a commercial agency than to use the land registration system directly.

Most bulk users are agencies of one of the three levels of government. As such, they are granted special consideration in relation to fees, recording procedures, plan examination and approval and information abstracting and reporting.

The Ministry of Consumer and Commercial Relations is, itself, a bulk user of this system. Large volumes of boundary and ownership information are extracted from and then presented to the system when processing registrar's abstracts, Registrar's Compiled Plans, First Applications and Applications for Certificates of Title.

As a result, the Ministry experiences the strengths and weaknesses of the current system as both its operator and one of its users.

III

CURRENT SYSTEM PROBLEMS AND THE NEED FOR LAND REGISTRATION SYSTEM IMPROVEMENT

A. THE NEED FOR CHANGE

Comprehensive reform of the arrangements for land registration in Ontario is urgently needed.

This comment by the Ontario Law Reform Commission from its Report on Land Registration, March, 1971, is echoed by both system users and operating staff. Since 1971, no major changes have been made to improve land registration procedures. This lack of improvement has resulted in:

- rapidly increasing operating costs, due to salary inflation and additional staff; and
- less satisfactory program delivery, demonstrated by the increasing level of complaints by system users.

Many of these problems can be directly attributed to growth. Registration volumes are increasing at 5%-10% (compounded) annually. The number of documents and the space required for their storage grows proportionately. Also, recent legislation such as The Land Speculation Tax Act and The Land Transfer Tax Act have increased the office workload.

Recently, Provincial restraints on staffing and salaries prohibited a proportional increase in the people and skills required to maintain satisfactory operation of the manual system. Reduced staff cannot adequately service user requirements. Only rapidly increasing use of contract staff has avoided operational breakdown to date.

Problems with the current system have been identified by both system users and operating staff. Most problems are dealt with on an unofficial basis. Relatively few are documented for formal resolution. Usually, difficulties are resolved through the cooperative efforts of system users and operating staff.

From time-to-time, there has been a concerted effort by users to force a change in the system. Examples of these forced changes include:

- the addition of staff to the Toronto land titles office to cope with a serious backlog situation; and
- relocation or enlargement of the Brampton, Ottawa, Milton and Windsor offices to resolve serious space problems.

These problems are not unique to the Province. Land registration systems are undergoing change worldwide. Governments are discovering that land records provide an information resource. Registration systems are becoming land information systems. Land information is becoming a basic resource that modern government cannot do without.

Other government agencies (local, provincial and federal) are modernizing their recordkeeping systems to meet modern land information demands. However, they are forced to continue with manual procedures in their dealings with the land registration system. Automated methods of providing the information required are not available. Because of its manual nature, the land registration system cannot adequately service the needs of these users.

A number of factors suggest that comprehensive change should be undertaken now. These include:

- the increasing volume of registrations;
- the lack of uniformity in operation of the offices;
- the increasing costs of a labour-intensive manual operation;
- the availability of low-cost, high-performance microfilm and computer systems; and
- the increasing amount of duplicate mapping, surveying and ownership information.

To define the changes required, the problems with current system operation must be understood.

B. A SUMMARY OF CURRENT SYSTEM PROBLEMS

Examination of current system operation revealed a number of problem areas. Depending upon a user's familiarity with the system and what he is trying to do, these may be minor irritations or major obstacles.

1. The Legal System

The legal framework for land registration is complicated and demanding. Even for the professional, there are a number of basic problem areas. To provide better communication between the system and its users regarding these problem areas, a "user committee" was set up a number of years ago. Representatives of the Property Rights Division and the Ontario Bar meet regularly to identify and resolve major user complaints.

The minutes of the user committee meetings show areas where formal discussion of problems has taken place. Of course, many other problems are resolved informally by local or head office staff dealing directly with system users. A review of the committee minutes, general correspondence and recent discussions identified the following as major problem areas:

- the lack of a complete title record; and
- the complexity of documents and the number of affidavits required.

A number of major complaints occur repeatedly. In some cases, users went so far as to submit suggested legislation to the Division for rectifying perceived shortcomings. The legal profession is well aware of the need to improve the legal framework for land registration. Of particular concern are:

- the title effect of The Planning Act;
- the number of unregistered government liens;
- the number of affidavits required for registration;
- the entire writs of execution system; and
- the length and complexity of documents used in conveyancing.

Increases in workload and complexity of registration have not been matched by corresponding increases in staff. This has reduced the available time of experienced staff. It is becoming increasingly necessary for each user to thoroughly understand the system and know exactly how to deal with it. This is not possible at present. Procedural guides covering some aspects of land registration are not available. The user of the system has neither a reference to acceptable procedures nor a guarantee that information acceptable to one office will be accepted in another.

Most real estate transactions involve at least two visits to the local land registry office. The first visit is to search the title. Search information cannot be obtained over the telephone. There is no effective method available for performing searches by mail. Closings usually involve a second visit to the office where registration of documents can be observed. This results in office crowding and service delays, especially on high volume registration days.

Two characteristics of the registry system have been the subject of continuing controversy. The Canadian Bar Association has frequently requested a reduction in the length of the search period.

Improved organization of the abstract index records is also required. To locate the required index entries, the searcher may have to review:

- unrelated entries on the same page;
- multiple pages of an index book; and
- multiple books.

Each title searcher must recreate the work of those before him. The results of prior searches are not available from the system. Even though search rules have been established to limit the period for which a search must be made, they have been lengthened in practice because lawyers consider them unclear.

To verify a property identification, the searcher will often need to sketch a map of the original grant and its succeeding severances.

The land registration system does not contain all title and boundary related information. The process of searching for unregistered claims will normally require the system user to visit or contact a number of other agencies. The incompleteness of the records means that:

- the user workload is increased;
- the staff workload is increased because additional examination of documents and reporting of statistics is required; and
- the land registration system information is less useful.

The land registration system works relatively well for the registration of straight-forward documents. However, registration of complex documents, processing of special applications and complex registry system searches are slow processes. All involve heavy staff workloads. The examination, requisition, notice, objection, hearing and appeal processes involve lengthy delays. System service times for these processes are usually expressed in days or months.

About 70% of Ontario's land parcels have no Provincial guarantee of title or boundaries. The basic philosophy of the registry system is to record rather than to

guarantee. Even the land titles system offers no clear definition of the degree of title and boundary assurance provided. The compensation fund of the land titles system is considered to be a last resort.

2. The Document and Plan Systems

The present system accepts original paper documents and plans for registration. Documents are microfilmed and plans are duplicated. Reproducible copies of plans and microfilm copies of documents are then stored outside the local office.

Copies of most plans are provided to system users. The original plans remain with the system staff. However, original documents are given directly to the public. Replacement of lost documents is usually possible since they have been microfilmed or recorded in "copy books". However, detection of altered documents is difficult if not impossible in the present system.

In general, system safeguards against alteration, loss or theft of records are inadequate. Also, constant use of the originals eventually leads to their deterioration. This causes problems for both system users and staff. System efficiency and effectiveness depend upon the completeness, accuracy, legibility, organization and physical state of the records.

Storage of paper documents and plans is a continuing problem. Filing cabinets are bulky. Misfiling can sometimes be a problem. More filing space is needed each year as new documents and plans are registered. There are already over 34 million paper documents stored in the system and over 1 million are being added each year. Therefore, approximately 70,000 square feet of floor space is already devoted to document filing and over 2,500 additional square feet is required each year.

Lack of space is a serious problem to both users and staff. Public pressure for adequate space has forced relocation of some offices to larger quarters. Some offices have been enlarged in the recent past. Most other offices are crowded and will require enlargement in the near future. Examples of new buildings or relocation include the facilities in:

- Brampton;
- London;
- Windsor;
- Kitchener;
- St. Catharines; and
- Milton.

Changes in the document and plan systems are required to:

- increase system security;
- maintain the condition of system records;
- reduce office filing space requirements; and
- reduce clerical filing and retrieval times.

3. The Problems of Manual Processes

For years the system has been incapable of resolving many of the major user complaints. Land registration is a manual system. Primarily for this reason, it is unable to provide the speed and flexibility of information handling that many users require. This is reflected in complaints received from users. The most frequently mentioned problems are:

- the long waiting time for search information;
- the lack of uniform operation from office-to-office;
- the delays experienced during peak registration periods;
- the backlogs and delays in entering registration information into the records;
- the poor description of many land parcels and difficulty in determining relationships to adjoining land; and
- the number and length of line-ups awaiting service.

In some cases, a large volume of correspondence has forced corrective action. In the past, large additions to staff usually resulted. For example, the Toronto land titles backlog of 23,000 unprocessed documents (3 months registrations) in 1972 forced the addition of a night shift abstracting section.

More recently, strict constraints on complement staff have resulted in a huge increase in contract staff to maintain service. The number has grown from 30 in 1972 to over 200 at present, added to approximately 750 regular staff. (There are another 100 in the Personal Property Security Registration system which is also administered by the Division.)

The land registration system is entirely dependent upon manual methods for:

- examination;
- registration;
- fee book entry;
- abstracting;
- filing; and
- retrieval.

System users are dependent upon efficient system operation in each of these areas. Operational breakdown of the system occurs when delays in any of the functions increase excessively. Such delays also result in significant increases in user and system operation costs.

Being labour-intensive, the system has difficulty in responding to high volume registration workloads. Heavy registration activity or absence of a few key individuals can severely impair the ability of an office to offer satisfactory service. Since the system is primarily manual and utilizes clerical staff extensively, time-consuming checking and double-checking procedures are used to ensure the accuracy of information handling.

Documents and plans submitted to the system are often complex. Interpretation of the applicable requirements requires highly skilled and knowledgeable staff. Considerable judgement must be exercised in both examination and abstracting. Recruiting, training and motivating of this staff is increasingly difficult.

Offices must produce a variety of reports for head office and other government agencies. All reports must be prepared manually. Most of these reports are produced on a regular basis. The information they require is accumulated in the local office transaction-by-transaction. There is no efficient way of producing information on a special request or demand basis. A manual review of each document is required. The staff necessary to conduct this type of search is unavailable.

The land registration system operates on a cash basis. Fees are paid as individual services are performed. This results in many small transactions occurring in the office. Since tax collection may also be involved, the total amount tendered depends not only upon the type of document but on the terms and conditions of the transaction.

4. The Availability of Land Information

The original purpose of the land registration system was protection of individual interests in land. It was designed to record individual transactions against individual parcels.

More and more agencies now require massive amounts of information from the system on an on-going basis. The system was not set up to provide data for large numbers of transactions or groups of land parcels. The requirements of these "bulk information users" cannot be met by the manual system. The information is contained in the land registration system files. However, there is no economic or timely way to retrieve it.

This has led to a proliferation of land registration information files. Other agencies requiring the information on an on-going basis, in essence, maintain a duplicate set of records or, if computerized, transcribe the information manually for subsequent data capture.

Absence of unique land parcel identifiers is also a problem with the current system. Searchers continually have difficulty in locating the parcels in which they are interested. Assessment maps are sometimes used as an aid, but are usually not available. If available, they are not current and can only serve as a guide.

The agencies requiring bulk information include:

- the Assessment Division of the Ministry of Revenue;
- TEELA Market Services;
- the Ministry of Transportation and Communications;
- the Federal Income Tax Branch; and
- various planning agencies.

Each agency has set up procedures to work around the limitations of the manual registration system.

C. THE MAJOR AREAS REQUIRING IMPROVEMENT

Resolution of the existing problems and transition to an improved land registration system is complex. Many of the problems attributed to the current land registration system are interrelated. By combining related problems and breaking them down into their simplest form, the overall requirements for land registration become apparent. There are requirements and potential improvements in ten major areas:

- improvement of the legal concepts;
- assurance and compensation;
- complete property information;
- property identification;
- information quality controls;
- information retrieval;
- records maintenance;
- uniform and efficient system operation;
- potential for automation; and
- adequate staffing, facilities and funding.

The requirements in each area are discussed briefly below.

A number of legal concepts require modification and simplification to provide a system which is:

- more responsive to user needs;
- simpler to use; and
- easier to administer.

Some relatively simple changes could improve both existing systems. There is an obvious need to reduce the amount of paper entering the systems. Short standardized forms with fewer affidavits would reduce the work involved in preparing and examining documents submitted for registration. Elimination of requirements such as personal seals and modification of the rules governing restrictive covenants and easements would simplify the conveyancing process.

In the land titles system, the rules governing cautions, notices and leases require clarification and revision. Adverse possession can resolve major title problems and should be allowed.

The registry system requires improvement in two major areas. First, the length of searches must be reduced. Second, searching must be made easier and faster.

These legal improvements will result in drastic reductions in both user and system workload.

The present rules regarding assurance and compensation must be changed to:

- clarify and rationalize the levels of assurance available in the two systems;
- liberalize the rules regarding adverse possession in the land titles system; and
- allow more equitable compensation.

Both systems currently provide compensation with respect to recording errors. This is a basic responsibility of any recording system and must continue.

Similarly, both systems should affirm that all required documentation is present and that the documents have been properly completed.

Affirmation of legal effectiveness is assurance that the interest exists. This is basic to the philosophy of the land titles system and should continue. The registry system simply records information and, therefore, this affirmation should not be offered.

Fraud and forgery cannot be detected by the system or its staff. However, the land titles system currently provides an affirmation of proper execution. This is a responsibility of any land titles system and should continue.

Assurance regarding property extent is entirely dependent on the quality of survey information within the land registration system. Affirmation of useful existence guarantees that the description of the property within the system corresponds approximately to its location on the ground. This is the current level of affirmation offered by the land titles system and should be extended to the registry system.

Affirmation of precise location requires the property description within the system to correspond exactly to the situation on the ground. Ideally, the system should be capable of accepting this precise location information, but the affirmation should not be offered by either system. Rather, this level of affirmation should be provided by a court or an administrative tribunal.

Adverse possession is not now available in the land titles system. It should be available to allow the acquiring of title to abandoned land if the party in possession meets certain conditions and in the case of boundary encroachments.

From the user point of view, the lack of complete records is the most inconvenient, time-consuming and costly shortcoming of the land registration system. Ideally, the system should contain all information related to title and boundaries.

Complete title records would incorporate as much information as possible directly affecting title to land. The majority of unregistered interests in land should be abolished. Land use information, such as zoning regulations, should also be available from the system.

A complete survey record is also required. All survey and field note information should be recorded in the system. This will assist the surveyor in gathering information and allow the system to maintain accurate records regarding the location and extent of properties.

The current methods of property identification are inadequate. Improved property identification should provide:

- easy access to all information in the system; and
- simpler, more effective methods for storing and retrieving information.

There must be a unique property identifier for each land parcel in the Province. It should be cross-referenced to commonly known property identifiers such as street address or owner name.

Property maps are required to illustrate land parcel relationships and assign unique land parcel identifiers. The current status of land division must be shown on the property maps. Selective retrieval of property information by geographic area should be possible.

Document and plan examination processes are both complex and time-consuming. This complexity should be reduced without compromising the quality of information entering the system. Use of short standardized forms and procedures for document and plan examination is required. Both the examination and abstracting processes would be speeded up substantially. All information required for examination and abstracting should appear on a standardized first page. The intent of the parties would be clearly set out. Errors and misunderstandings would be minimized.

The information retrieval process requires improvement. An improved system must provide the following benefits:

- easier and faster methods of providing information;
- the ability to quickly locate the required information; and
- less need for personal attendance at an office each time that information is required.

Fast service is a major requirement of the user. The time required to serve an individual user must be reduced. This need is especially significant in coping with the volumes experienced on peak registration days. Easier and faster access to information within the local office will benefit both users and system staff.

The information contained in the document and plan files is the basis of most of the work done in the land registration system. System efficiency and effectiveness depend upon the completeness, accuracy, legibility, organization and physical state of this information.

The system must ensure the validity of information stored in its document and plan files. Copies, rather than originals, should be supplied to system users. Back-up copies must be available for security.

Historical information must be maintained. However, many users require only current information. An efficient method of removing obsolete entries from the current files is required.

Land registration requirements should be uniform in all offices. Administrative and operating procedures should be consistent across the Province. Procedural guides and check-lists describing the methods for using the system are required. Simpler, more efficient procedures should be devised for:

- processing registrations;
- providing search information;
- subsearching; and
- collecting fees and taxes.

The potential for automation exists in many areas of the land registration system. Both computerized and mechanical assistance must be explored. The potential for automation is greatest for activities of a routine, well-defined nature. A modest level of automation could result in lower clerical costs and faster service to system users. The ability to cope with increasing volumes and peak registration activity would be improved.

Every possible efficiency must be utilized to keep staff increases to a minimum. However, inevitably, increased volumes require increased staff. Changes in methods and technology will require different staff skills. Training programs must be expanded. Adequate numbers of well-trained staff must be provided to operate the land registration system.

Changes to the system will require changes in the operating environment. Several low volume offices should be closed. Adequate facilities must be provided in the remaining offices.

All proposed improvements depend directly on the provision of adequate staff, funds and facilities. These must be available in order to proceed with any modernization of the land registration system.

D. SUMMARY

In this Chapter, the individual problems of system users and staff were discussed. Many areas requiring improvement were identified. But, many of these areas are interrelated. They cannot be dealt with in isolation.

The overall characteristics of an improved land registration system must be defined. These can then be used as the yardsticks to measure the suitability of various improvement alternatives.

IV

THE CHARACTERISTICS OF AN IMPROVED LAND REGISTRATION SYSTEM

A. LAND REGISTRATION AND THE PROVINCE

The Province must retain overall responsibility for the land registration system.

Individual interests in land must be protected. This protection can best be offered by the Province. The Province is best able to establish fair rules. Investigation of American jurisdictions where private insurance companies virtually operate the land registration system has shown that costs are much higher and system safeguards are considerably less than with the present system in this Province.

The Province currently operates two land registration systems. There are arguments in favour of each. The land titles system is generally seen as preferable for safeguarding land interests. The major advantages claimed for it are the ease of searching title data, the security of a public guarantee of ownership and the need for a minimum of stored documentation.

Others prefer the registry system. Its ease of document registration is a major benefit. With properly maintained geographic indexing, title searching could be made almost as simple as in the land titles system.

Proper comparison of the two systems requires information that will not be available until after improvements are made to both. Selection of a single system can only be justified after it becomes clear that one is definitely superior to the other. At least in the short term, the Province should continue to maintain both systems. If, after improvements, one proves clearly superior, all land in the Province can be brought under that system.

B. CLARIFICATION AND IMPROVEMENT OF THE LAW

Some areas of law would benefit from modification. The proposed improvements involve:

- restrictive covenants and easements;
- cautions, notices and leases in the land titles system;
- the search period and discharged and expired interests in the registry system;

- title and boundary assurance;
- adverse possession in the land titles system; and
- compensation.

As a first step, The Land Titles Act should be amended to eliminate confusion between conditions, restrictions and covenants. The present Act provides a limitation of 40 years if the term is not otherwise stated. This should be the maximum length of any restrictive covenant in either system. Permanent limitations on the use of land should be impossible.

All easements should be registered in order to be effective. Unregistered easements (such as those under Section 43 of The Power Commission Act) complicate searching. There should be no requirement for a dominant tenement. That will allow easements in favour of persons and corporations who are not necessarily land owners.

In the land titles system, a caution placed on title has the effect that no dealing with the land can be registered until the consent of the cautioner is obtained. This is too powerful a device to allow its misuse. The elimination of cautions should be considered. As a minimum, the Act should be amended to make it clear that a caution can only be registered to protect a "proprietary interest"; that is, a present or future right to ownership. Notices should be used to protect other less substantial interests in land. Both cautions and notices should have defined expiry dates.

Long-term leases create interests very close to ownership and are often dealt with in much the same way. All leases having a duration greater than 21 years should be registered as leasehold parcels. Leasehold title should also be available although not compulsory for leases having shorter terms. As in the present land titles system, any lease longer than three years should be registered at least by way of notice to be effective against third parties. This provides notice of the lease to prospective purchasers.

The Registry Act appears to require a 40-year search only. However, lawyers rely on previous case law and usually go beyond the 40-year period. As a first step, the legislation should be amended to make it clear that the required search period is limited to 40 years or the first independent conveyance before that, if there has been none within the 40-year period. Reduction of the 40-year search period should be investigated. Discharges should become effective on registration and the searcher should not be required to examine documents whose expiry date (which should be noted in the abstract index) has passed. These changes will result in a major time and, therefore, cost saving to both the system and its users.

As a minimum, both systems must affirm proper completion of documents. The system user must be able to rely on the fact that documents accepted for registration have been completed properly. Affirmation of legal effectiveness is a basic responsibility of any land titles system. Ontario's land titles system must continue to provide this affirmation. The philosophy of the registry system prohibits offering an affirmation of legal effectiveness.

Affirmation of proper execution provides protection against fraud and forgery. It is not possible for the system to detect either. Nevertheless, this protection is currently provided in the land titles system. It is basic to the philosophy of the system and must continue. In the event of a marked increase in problems involving fraud or forgery, a notice procedure could be implemented to provide parties with a means of detecting fraudulent dealings. To protect their rights to title or compensation in the land titles system, parties would be required to respond to the notification within a specified period of time.

Affirmation of useful existence of properties is currently provided in the land titles system. This should continue and should be extended to the registry system wherever survey information is adequate. Affirmation of precise location should not be offered in either system. However, the system should be capable of accepting and recording a precise statement of where boundaries are located for land owners who have gone to the expense of obtaining a confirmation of precise location from a court or tribunal. The value of such a confirmation is that it eliminates historical searching as well as the need to maintain historical records.

To resolve problems with both abandoned land and boundary encroachments, adverse possession should be allowed in the land titles system. This change should not be retroactive. Present registered owners should not be deprived of their rights. In the case of abandoned land, a squatter should be required to register a notice of claim. A subsequent hearing would establish the rights of the parties and, on receipt of a favourable judgement, the person in possession would be able to acquire title and deal with the land.

Compensation should be provided for injured parties in the case of:

- recording errors;
- acceptance of improperly completed documents;
- acceptance of improperly executed documents (in the land titles system only);

- acceptance of legally ineffective documents (in the land titles system only); and
- an inaccurate affirmation of useful existence of land.

Compensation should be extended to include mineral rights. However, it is recommended that the upper limit on any one claim should be three times the value of the surface rights alone. The amount remaining in the fund should not be the ceiling on compensation to be paid out. The Land Titles Act concept of a compensation fund should be extended to the registry system.

As in the present land titles system, the normal procedure for compensation should be to proceed first against any individual responsible for the loss. However, there should be a provision allowing the administration to waive the necessity for a fruitless action. Of course, in the case of system errors, claimants should be able to apply directly to the fund. In all other cases, the compensation fund should be used as a last resort.

C. CERTIFICATION IN THE REGISTRY SYSTEM

Certification in the registry system under The Certification of Titles Act provides an assured statement of ownership and encumbrances at a stated point in time. It eliminates historical searching beyond the point of certification and can dramatically shorten the search period.

Certification results in:

- shorter and easier searches;
- reduced staff workload in filing and retrieving; and
- reduced numbers of older records that must be retained in the office.

As a minimum, all new plans of subdivision entering the registry system should be certified using the present legislation. This can be done by designating as certification areas all areas of the Province to which the land titles system has not been extended.

Subdivision plans registered in the past 15 years are of relatively high quality as a result of increasingly stringent examination procedures. Retroactive certification of these plans by the system as at the time of registration is possible. A statement of ownership at the time of registration and encumbrances outstanding at the time of certification should be provided. The likelihood of errors is small. Accordingly, the notice and objection procedure should be avoided and compensation paid for any losses.

This type of certification can be done quickly and cheaply. It will produce an immediate and noticeable reduction of user search time and staff workload. Both the system and its users should realize significant savings. To achieve maximum effect, implementation of the program should start with recently registered plans and then work backwards.

Most of the improvements discussed reduce the number of documents the searcher must examine. Certification of subdivision plans also means that the search is organized by land parcel, which further reduces search time and system workload. However, the remaining index books normally involve the most difficult and time-consuming searches, since none of the information is organized on an ownership basis. To maximize the efficiency of the registry system, these books must also be parcelized. This can be done most effectively by obtaining the required information from users. By doing this, it can also be conveniently combined with certification of these remaining parcels. In any transaction for which a complete title search is performed, the lawyer would be required to provide an opinion on title indicating the ownership and all current interests in the land. This would then be checked by the system staff and title certified accordingly.

Using this procedure, complete parcelization and certification within an acceptable period of time is unlikely, if not impossible. After perhaps ten years, the great majority of properties would have been dealt with and administrative completion of the parcelization and certification program would be both logical and feasible.

The more current certification is, the shorter the search period becomes. In order to minimize the search period, some form of on-going certification process should be considered.

D. SHORTER STANDARDIZED FORMS

Shorter documents with standardized wording would benefit both users and system staff.

Many of the clauses appearing in thousands of documents can be condensed. Some requirements are obsolete. For example, the use of personal seals dates from an age when few people could write. The requirement is now a formality and should be eliminated retroactively.

Affidavits are intended to ensure the validity of information entering the land registration system. Most should be abolished. These would include:

- the affidavit of age;

- the affidavit of subscribing witness;
- the affidavit of compliance with The Mortmain and Charitable Uses Act; and
- affidavits relating to tax legislation, which should be replaced by one short form containing all tax related information.

For most common documents, a prescribed form with standardized wording would be adequate. In the case of multi-paged documents, the first page would contain all information necessary for abstracting. For other documents, such as mortgage discharges, a single-page form would be all that is required.

This simplification would result in:

- less time preparing documents for registration;
- less time checking documents for registration;
- less time required in the searching process;
- reduced microfilming costs;
- reduced storage requirements for document filing;
- fewer pages and less cost for making copies; and
- an improved service level on high volume registration days.

Cumulatively, these benefits result in major savings for the land registration system and its users.

E. COMPLETE AND ACCURATE INFORMATION

A complete title record would contain all documents related to title and use of land parcels. This requires that all interests in land be registered. A complete survey record would contain all survey plans which are of some legal significance to property ownership and conveyancing. This requires that all survey plans dealing with location, extent and use of land parcels be registered.

This benefits the system users since all title, survey and boundary information would be available from the land registration system. The time required to obtain information from other sources is eliminated, resulting in a major reduction of conveyancing costs.

Provision of a complete title record involves amending legislation dealing with:

- government liens;
- writs of execution;
- The Planning Act; and
- municipal clearances.

Government liens and writs of execution are currently unregistered interests in land. This creates problems in searching since all information is not available from the land registration system.

There are two types of government liens:

- specific, against a particular parcel; and
- general, against all land the debtor owns.

Since specific liens are against a particular parcel, they can and should be registered to be effective. Municipal taxes are an exception to this general rule. As soon as one tax lien is discharged, another is created. Registration makes no sense in this case and should not be required.

With the exception of the liens for corporations tax and succession duty, all remaining general government liens should be abolished. If any such lien is to be retained, it should be made specific and registered against particular land parcels to be effective.

With corporations tax, the current corporate owner should be required to obtain a consent from the Corporations Tax Branch before the land registration system will accept a transfer or grant. Application of the lien should be limited to only the current corporate owner. This means that the purchaser has no search to make. The Corporations Tax Branch has only one name to search and any problems are resolved directly with the corporate owner.

Succession duty clearances are already required. This lien should apply only to duty levied after the death of the current owner.

Writs of execution are unregistered interests in land that cause users particular difficulties. In most cases, it is impossible for a creditor to locate the debtor's land in the land registration system until an attempt is made to sell the property. The writs file must be searched at the time of registration to ensure the land is free of such debts. Vendors having a name similar or identical to a judgement debtor usually have difficulty in dealing with

land. They must prove that they are not the debtor before the purchaser will go through with the sale. The entire process complicates land dealings. It does not serve creditors well and inconveniences owners.

A satisfactory solution of this problem requires that to be effective, writs must be registered directly on title. This necessitates creation of an index of owners' names and their holdings to allow creditors to locate the land owned by their debtors. Creditors can then register their writ or take steps to sell the land immediately. In cases where the judgement debtor does not currently own land, provision should be made to notify the creditor when someone with the debtor's name acquires property. Once satisfied that the name provided by the system is, in fact, the judgement debtor, the creditor can take the steps necessary to register his writ on title or sell the land.

Violation of the subdivision control provisions of The Planning Act makes a conveyance ineffective even in the land titles system. Detecting a violation currently involves an historical search of all adjoining land as well as the particular parcel in question. These searches can be very difficult and should be eliminated.

It is preferable to make violation a criminal offense subject to a substantial fine and eliminate the effect on title. This eliminates all searches and affidavits of compliance with The Planning Act. The possibility of a substantial fine should be as effective a deterrent to violations as the present system.

On each sale of property, municipalities must be queried regarding any violation of side lot clearance and set-back by-laws. A better procedure would be to require municipalities to register an objection to new structures within three months of construction. Registration of a notice of violation against a specific property would remove the need for repeated enquiries and municipal clearances where, in fact, no violation has occurred.

A discussion of a complete survey record must deal with:

- the number of plans registered in the system;
- the method by which property boundaries are described;
- the need for survey field notes to verify the true physical location of boundaries on the ground; and
- the mapping of properties in the system.

Only some types of survey plans and property maps are currently required to be registered in the system. Surveyors and others interested in the location and extent of properties must search in many places to assemble the required information. To improve the completeness and quality of information, all survey plans relevant to ownership and conveyancing should be registered and available to the system and its users.

Most plans in the land registration system use reference ties to the historical township survey fabric. A more satisfactory method would be to use coordinates referenced to the Ontario Coordinate System. This would result in a series of maps and plans bearing accurate and controllable relationships to each other. The Ontario Coordinate System control network is not totally in place throughout Ontario. Areas in which the control network is sufficiently dense should be designated as integrated survey areas and the use of coordinates should be mandatory. In other areas, the use of coordinates should be encouraged.

Survey field notes contain the record of evidence and measurements used to physically locate or relocate boundaries on the ground. Sufficient field note information should be included on registered plans to allow the true ground location and relationships of boundaries to be determined easily.

The information contained in the system must also be accurate and reliable to be of use. This requires some form of examination, or quality control, of information as it enters the system.

The quality of survey information affects the ability of the system to offer an affirmation of useful existence of land parcels. This affirmation should be offered in both the registry and land titles systems. It follows that, if the level of assurance is to be identical in both systems, the quality of survey information entering the systems must also be identical.

It is essential that all plans of survey be examined prior to recording in the land registration system. The level of examination should be uniform from office to office for both systems. The depth of examination may vary depending upon the type of plan and its intended use.

The level of quality control relating to documents is also a function of the affirmations to be provided by the system. Two levels of affirmation must be considered:

- affirmation of proper completion; and
- affirmation of legal effectiveness.

Affirmation of proper completion should be offered in both the registry and land titles systems. This requires checking of each input document to determine that all required material is present and that it has been completed correctly. The land titles system must also offer an affirmation of legal effectiveness. This requires examination of the title record and the legal content of documents as well as form and completeness. Information contained in the title record must be compared to the information in the document. Conflicts must be noted and resolved before registration.

Currently in the registry system, registration is effective upon acceptance of documents. Registration in the land titles system is effective only when the appropriate entry in the parcel register is signed. Land titles documents may be returned after they have been accepted at the counter, although this rarely occurs.

The possibility of return of a land titles document is of great concern in the conveyancing process. Certainty of registration and the opportunity to deal with any registration problem before closing are essential to the parties conducting the transaction.

Equally essential is the requirement that system staff register only effective documents. The staff require time to check and, if necessary, refuse registration for incomplete or ineffective documents. This is especially true in the case of complex documents.

Straight-forward documents pose few problems and can be processed relatively quickly. Registration of a simple document on the day presented is a reasonable expectation for the user. The system should offer this level of service.

The same level of service cannot be offered for complex documents. Users must be encouraged to submit documents for examination prior to the date on which registration is to occur. A "pre-approval" process will allow staff and users to deal with registration problems in advance of the closing date. Registration of a pre-approved document on the selected date could then be guaranteed.

Complex documents which have not been pre-approved would be accepted for examination when presented. However, no guarantee of registration on the intended date would be extended.

In this way, examination at the front counter would be limited to simple or pre-approved documents. Delays due to examination of complex documents would be eliminated. Registration service on high volume registration days would be improved and waiting time for information reduced for all users.

F. PROPERTY IDENTIFICATION AND INFORMATION ORGANIZATION

All land parcels in the Province are identified in some way. Metes and bounds descriptions or references to lot and plan or concession numbers are currently used.

However, locating land parcels in the current system can be difficult. The description of one land parcel is sometimes similar or identical to that of others. Confusion in identifying properties being dealt with is unacceptable. It increases the possibility of errors for both system users and staff.

Assignment of a land parcel identifier unique throughout the Province is required. It is an essential prerequisite to most system improvements. The unique identifier should be a short, simple number. It should be suitable for system users and staff. It should be flexible enough to accommodate changes in conditions and technology.

A mapping system to illustrate land parcel relationships is required to assign unique land parcel identifiers. Also, to provide an affirmation of useful existence, the approximate size and location of each land parcel throughout the Province must be illustrated in map form. Unfortunately, maps do not exist for many land parcels in the Province. This is unacceptable.

To be of maximum use, the maps must always reflect the existing situation. Therefore, they must be updated to reflect all new registered land divisions. In other words, property mapping must be "dynamic".

In Ontario, a coordinate system has been established by legislation to provide a common geographic reference base for the entire Province. It provides a framework to which land parcels may be referenced on a local, regional or provincial level.

Ground control stations for the Ontario Coordinate System are being established. Control monumentation at both the federal and provincial levels is continuing and gradually increasing the density of ground control. To be consistent with this program, property maps should be based on the Ontario Coordinate System.

Property maps should illustrate the relationships of a number of parcels within a geographic area, or block. Each block would contain a number of land parcels within the confines of discernable limits such as streets or natural boundaries such as waterways.

Each block would be assigned a unique number. Within each block, individual land parcels would be assigned numbers on a sequential basis. Thus, each land parcel would be

identified uniquely by the block parcel number shown on the property map. Since the block is referenced to the Ontario grid system, each land parcel on the map would be located in a position corresponding to its approximate location on the ground. Figure 5, page 44, shows a sample section of a block map

By capturing exact coordinate values from plans entering the system, the precision of property map boundaries can be upgraded on an on-going basis. The coordinates of the approximate centre of the property (geocentre) can also be determined and used to retrieve land parcel information on a geographic basis. The primary identifier, the block parcel number, would normally be used by system users and staff. It is the basis for organization of the index records by land parcel ("parcelization"). Cross-references to other commonly used identifiers would also be provided.

Parcelization is required to allow the system user to locate information relating to a particular land parcel in one easily accessible place. This reduces the waiting time for information and consequently the user's costs. The existing document and plan files are not organized this way. Documents and plans are filed sequentially in several comprehensive files. Parcelization of the document and plan files is impractical. Some plans refer to many parcels. Many documents affect more than one property. However, complete parcelization of the indexes is possible. It is also a pre-requisite to a number of important potential improvements.

Index books in the land titles system (the parcel registers) are maintained on a parcelized basis currently. In the registry system, the abstract index books for condominiums and recent subdivision plans are, in effect, parcelized. Other registry system index books are not. A title search will, therefore, require review of a number of pages containing unrelated entries and, perhaps, a number of index books. The indexes in both systems should be completely parcelized. This parcelization should be maintained to reflect subsequent changes in land parcel boundaries. The block parcel number should be used as the basis for organizing all entries in the indexes. Parcelization is contingent upon the assignment of block parcel numbers and, therefore, on the completion of property maps.

Currently, the services provided by the land registration system are almost entirely decentralized. Information on a land parcel is available only from the office which serves that area. Indexes, documents and plans must continue to be available on a local basis. System users are located throughout the Province and the majority will wish to continue dealing with an office in their immediate vicinity. Regionalization or centralization would clearly not improve the level of service in most areas.

FIGURE 5
SAMPLE SECTION of a BLOCK MAP



**PROPERTY INDEX MAP
 LAND REGISTRATION ZONE 7
 MAP BLOCKS 269 & 275**

However, most bulk users of registration system information would benefit if the need to inspect individual land parcel records in each office was reduced. Therefore, some consolidation of title and survey information on a central or regional level would be of benefit. This would allow bulk users to obtain selective or aggregate information for large areas easily and quickly and at a reasonable cost. However, central or regional information should be provided in addition to, and not as a replacement for the information in the local office.

G. THE FORM OF RECORDKEEPING AND INFORMATION SECURITY

The present system accepts original paper documents and plans for registration. Only copies of most plans are provided to system users. However, both index books and original documents are given directly to the public. Usually, the index books are the only existing record. Duplicate books do not exist for back-up and security. Document replacement is usually possible from microfilm or "copy book" records.

In general, system safeguards against alteration, loss or theft of records are inadequate. Constant use of original records leads to their deterioration. Reconstruction of some lost or destroyed records is difficult, if not impossible.

Most of the original documents and plans are bulky. This contributes to the storage space required in the offices. Better methods for recordkeeping and security are required.

Both documents and plans should be maintained on microfilm. The user requesting a document or plan should receive a microfilm copy. This reduces the possibility of alteration, loss or theft of system records. The security of the system is greatly enhanced. Space requirements are greatly reduced. Filing and retrieval times can be significantly improved.

The indexes are essential to system operation. A method of easily and quickly duplicating or reconstructing indexes is imperative. Ideally, a computerized system should be used for maintaining index information. This would provide the ability to reproduce indexes on demand. It would also allow automatic deletion of expired interests and provide efficient abstracting for multiple entries.

The use of computerized records poses questions with regard to information privacy. The current land registration system is completely public. However, it is not used to obtain information unless the searcher has a direct interest in the property. Few people are sufficiently familiar with the system to be able to obtain information casually.

With automation, information on property holdings or dealings could be obtained easily and quickly. This could be considered to be an invasion of privacy or abuse of the system's capability.

Because of its current public nature and because most information is not of a "sensitive" nature, there is little reason for restricting access to individual land parcel information. The ability to quickly obtain masses of information and aggregate reporting has not been readily available from the system to date. Access of this type should be possible but should be restricted to legitimate users.

H. OTHER CHARACTERISTICS FOR IMPROVED USER SERVICE

Many of the characteristics described in previous sections will improve service to the user. However, some additional user service characteristics must be considered.

Land registration services will continue to be offered in many offices throughout the Province. Expecting system users to deal with different rules in different offices is unacceptable. Documents and plans acceptable in one office should also be acceptable in any other office. Information obtained from the system should be of equally high quality in all offices.

The implementation of improvements will result in major changes in land registration system procedures. User education through procedural guides and user manuals is essential if this change process is to be carried out effectively. Detailed procedural guides should benefit the user in several ways. The time required for document preparation should be reduced. The chance of document rejection at the time of registration should be greatly minimized. Avoiding the serious legal and cost consequences of document rejection is an important objective of the system.

Improvements to the routine registration and search processes have been previously discussed. However, some complex services are also provided by the system. If possible, the following processes should be improved and streamlined:

- examination and requisition;
- notice and objection;
- hearing and appeal;
- certification of titles;
- registrar's abstracts; and
- Registrar's Compiled Plans.

Land registration information serves different purposes for different users. While complete title and survey information is required, it should be possible to access various title and survey interests separately. This avoids confusion and unnecessary work for the system user interested in only one type of information. Title or survey information alone should be easily retrievable for any land parcel.

The present land registration system operates on a cash basis. For some users this is an inconvenience. All government agencies should be allowed to operate on credit accounts during the month and be provided with a statement owing at month-end. Deposit accounts should be available to private agencies and other regular system users. Of course, payment on a cash basis must be allowed to continue.

Availability of deposit accounts would simplify provision of service by mail. Mail service, for registration and search activities, could be provided and the fees debited to a deposit account. This would help minimize the need for personal attendance in the local office. It would also simplify provision of telephone service. A system user should be able to call to request a copy of information in the system. Once a copy is produced, it could be mailed or left for pick-up. These changes and the improvements allowing a user to complete his business in the office in less time will both reduce the need for personal attendance by the system user.

ANALYSIS OF SYSTEM IMPROVEMENT ALTERNATIVES

The previous Chapter defined the required characteristics of an improved land registration system. In this Chapter, the various system alternatives and potential improvements capable of satisfying these needs are discussed.

A. METHODOLOGY AND DEPENDENCIES

Detailed cost and benefit estimates for each potential improvement to the system were developed using a standard approach. Manufacturers' published price lists were used for equipment purchase, equipment maintenance and supplies costs. Provincial standard rates were used for staff and space costs. Standard ministry statistics and the experience of senior staff were used for volume projections and clerical processing time figures.

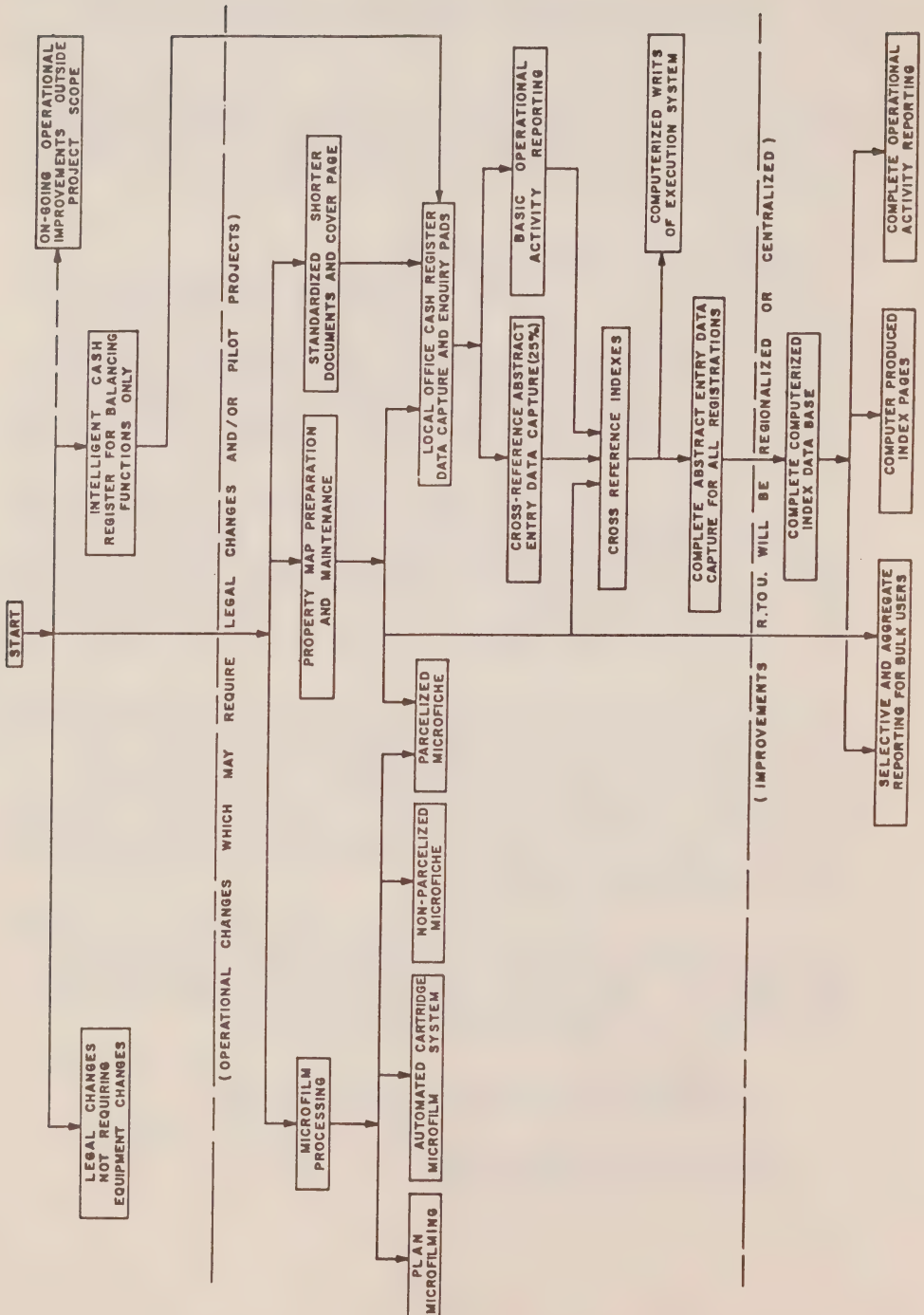
Wherever possible, savings were quantified. Displaced costs or easily obtainable savings were taken at full value. These types of savings were easily identifiable. Others would require a re-organization of duties in order to eliminate some full complement positions. The full value of the benefit might not be obtainable immediately. However, it is reasonable to expect that, at least, some portion of the saving will be realized.

In this case, the value of the potential saving was discounted. The discount was arrived at by applying time savings against registration volumes on an office-by-office basis. The realizable benefit was taken as the number of full complement positions which could be eliminated as a result of the improvement. Savings of less than a full complement position were not taken into account in the analysis. This method of discounting was used wherever appropriate to determine realistically achievable benefits.

A total of 19 potential improvements were identified. These are illustrated in Figure 6, page 49, System Improvement Dependencies. Many of the improvements are interdependent. For example, implementation of local office cash register, data capture and enquiry pads requires both:

- a cover page developed and introduced in conjunction with standardized shorter documents; and
- unique land parcel identifiers provided as part of property map preparation.

FIGURE 6



The dependency chart has been divided into three sections. The upper section indicates changes not requiring major operational revisions. The remainder illustrates operational changes which may require a corresponding legal change and/or testing of the change in a pilot project. The extreme lower portion of the chart indicates improvements which could be introduced on either regional or central computers.

The top right-hand corner of the chart recognizes that a number of operational improvements are currently in process. These are considered to be outside the scope of this study. However, it is expected that the recommendations of this study will give additional direction to the nature and priority of these on-going projects.

B. DETAILED COST/BENEFIT ANALYSIS OF SYSTEM IMPROVEMENT ALTERNATIVES

A detailed cost/benefit analysis was conducted for each potential improvement shown on the dependency chart. If a potential improvement could be achieved in a number of ways, a cost/benefit analysis was prepared for each alternative method.

Each improvement was treated as an independent entity. No attempt was made to combine improvements at this stage. Rather, it was considered essential that they be treated individually so that the most attractive alternatives could be easily identified.

A cost/benefit summary for each potential improvement was prepared. Figure 7, page 51, the summary page for legal changes not requiring equipment changes, illustrates the format of this analysis. The cost/benefit information for all of the potential improvements is summarized in Table 1, page 52, Cost Benefit Summary. For each improvement and alternative, the table shows:

- the total one-time cost, broken down into development, pilot project, implementation staff and implementation equipment costs;
- the on-going yearly costs and benefits, broken down into operating cost, potential benefit, realizable benefit and net benefit (or cost) figures;
- the cost recovery factor, calculated as a pay-back period after taking into account any delay in start-up of the benefit stream; and
- service related factors, where potential savings to government agencies and system users have been quantified where possible.

Figure 7

LEGAL CHANGES NOT REQUIRING EQUIPMENT CHANGESA. SYSTEM COSTS AND BENEFITS

<u>1. One-time Costs</u>	Staff	Equipment	Total	
Development	105,000	Ø	105,000	
Pilot Project Testing	Ø	Ø	Ø	
Sub-Total	105,000	Ø	105,000	
Implementation	528,000	Ø	528,000	
Total One-time Costs	633,000	Ø	633,000	633,000 (
<u>2. On-going Costs and Benefits (yearly)</u>				
Operating Costs	Ø	Ø	Ø	
Potential Benefits	480,000	Ø	480,000	
Realizable Benefits	360,000	Ø	360,000	
Net Benefit (Cost)	360,000	Ø	360,000	360,000 (

3. Payback Period (A ÷ B) (Years)

$$\frac{633,000}{360,000} = 1.8 + \text{Delay } 1 \quad \boxed{2.8}$$

B. OTHER GOVERNMENT AGENCIES

Statistics regarding the number of searches and documents registered by other Government agencies could not be isolated from those of other users. Therefore, savings are incorporated in "system users" benefits below.

C. SYSTEM USERS

Potential savings of \$5,250,000 annually based on reduced registry system search times. Savings result from a reduction of the number of documents to be examined as a result of two improvements:

- reducing the search period and giving immediate effect to discharges and expired interests - \$4,500,000
- certification of registered plans - 750,000

Total \$5,250,000

D. NOTES AND INTANGIBLE BENEFITS

TABLE 1 COST BENEFIT SUMMARY

Potential Improvements	O N E - S I D E C O S T S					O N - G O I N G T O S S E S A N D B E N E F I T S (Y E A R S)					C O S T R E C O V E R Y		
	D e v e l o p m e n t P i l o t P r o j e c t - S u b - T o t a l		I m p l e m e n t a t i o n		S t a f f	E q u i p m e n t	O n e - t i m e C o s t s		O p e r a t i n g C o s t	P o t e n t i a l B e n e f i t	R e a l i z a b l e B e n e f i t	(C o s t)	B a l a n c e P e r i o d
	D e v e l o p m e n t	P i l o t P r o j e c t - S u b - T o t a l	I m p l e m e n t a t i o n	S t a f f									
Legal Changes not Requiring Equipment Changes	105,000	0	105,000	528,000	0	0	633,000	0	480,000	360,000	360,000	1	2.8
Intelligent Cash Register for Balancing Functions Only	4,500	0	4,500	6,500	165,000	0	176,000	20,250	41,250	11,250	(9,000)	0	Nil
Microfilm Processing	0	0	0	2,000	135,200	0	138,200	6,760	n/a	n/a	(6,760)	0	Nil
Non-galvanised Document Microfiche	30,500	0	30,500	1,858,190	1,668,750	0	3,527,440	85,685	666,700	281,870	186,185	1	19.1
							3,695,440*				189,425	1	20.5*
Paralined Document Microfiche	37,250	26,250	63,500	2,078,190	3,117,050	0	5,218,740	532,800	735,320	317,130	(215,670)	2	Nil
							5,416,740*				(222,310)*	2	Nil*
Automated Cardridge Microfilm System	30,500	9,750	40,250	1,284,410	1,207,020	0	2,531,680	60,915	819,700	351,700	290,785	1	9.7
							2,669,680*				284,025*	1	10.4*
Plan Microfilming	34,400	50,000	84,400	114,195	606,555	0	805,150	10,400	170,000	84,500	74,100	0	10.8
Standardised Shorter Documents and Cover Page	142,000	35,000	177,000	61,000	0	0	238,000	0	291,000	218,250	218,250	0	1.1
Property Map Preparation and Maintenance	147,100	278,345	425,445	7,176,600	1,552,925	0	11,355,170	275,760	512,500	375,000	99,240	0	116.4
Local Office Cash Register Data Capture and Enquiry Page	74,000	42,500	116,500	103,300	1,591,300	0	1,811,100	85,715	254,000	69,450	(116,265)	0	Nil
							1,878,550**				(25,265)**	0	Nil**
Basic Operational Activity Reporting	34,000	2,250	36,250	2,000	180,000	0	218,250	45,675	150,000	78,000	32,325	0	6.8
Cross-reference Abstract Entry Data Capture (25%)	47,700	8,750	56,450	65,850	135,200	0	247,500	33,475	0	0	(33,475)	0	Nil
Cross-reference Indexes	40,250	0	40,250	474,000	0	0	514,250	15,650	10,000	0	(15,650)	0	Nil
Computerized Write of Examination System	90,750	23,000	113,750	7,000	0	0	120,750	28,670	60,000	30,000	1,130	0	91
Complete Abstract Entry Data Capture for all Institutions	24,100	2,250	26,350	29,850	77,200	0	134,100	26,420	0	0	(26,420)	0	Nil
***Regional Processing For:													
Complete Computerized Index Data Base	73,500	8,750	82,250	2,700	0	0	84,950	35,400	0	0	(35,400)	0	Nil
Computer Produced Index Pages (COM)	28,500	16,750	45,250	8,300	0	0	51,550	101,700	905,000	550,000	448,300	0	-11
Complete Operational Activity Reporting	14,750	2,250	17,000	0	0	0	17,000	33,750	55,000	27,000	(6,750)	0	Nil
Selective and Aggregate Reporting for Bulk Users	79,450	9,900	89,350	0	0	0	89,350	9,650	0	0	(9,650)	0	Nil
Sub-Total	194,200	37,650	231,850	11,000	0	0	242,850	180,500	960,000	577,000	396,500	0	-6
**Centralized Processing For:													
Complete Computerized Index Data Base	73,500	8,750	82,250	0	0	0	82,250	69,025	0	0	(69,025)	0	Nil
Computer Produced Index Pages (COM)	26,500	16,750	43,250	6,500	0	0	49,750	111,825	905,000	550,000	438,175	0	-11
Complete Operational Activity Reporting	14,750	2,250	17,000	0	0	0	17,000	33,750	55,000	27,000	(6,750)	0	Nil
Selective and Aggregate Reporting for Bulk Users	79,450	9,900	89,350	0	0	0	89,350	9,650	0	0	(9,650)	0	Nil
Sub-Total (COM)	194,200	37,650	231,850	6,500	0	0	238,350	237,250	960,000	577,000	344,750	0	-7
Sub-Total (Printed)	243,700	42,150	285,850	8,750	0	0	316,100	839,475	960,000	577,000	(262,275)	0	Nil

* Includes Microfilm Processing
** Includes Microfilm Processing for Selection Only

Three choices for microfilm document systems are shown near the top of this table. For each, the costs and payback period including microfilm processing in 9 regional centres are also given.

The costs of intelligent cash registers have been included in the costs for local office cash register data capture and enquiry pads. The sub-total figure, therefore, represents the total cost incurred with local office computerization.

The lower part of the table reflects the fact that some improvements could be introduced using regional or central computers. Sub-totals for these improvements have been included to show the effect of implementation on a regional or central basis. The centralized option also includes a comparison of the costs and benefits of computer produced printed or microfilm (COM) index pages.

Using the summary page, the most attractive combination of improvements was selected. This resulted in the list of preferred improvements shown in Table 2, page 54, Preferred System Improvements. Implementation of all 17 preferred individual improvements would result in:

- a total one-time cost of \$19,125,550;
- a net yearly realizable benefit of \$1,364,960; and
- a pay-back period of 14 years.

However, these cost and benefit figures were calculated by considering potential improvements as independent entities. In practice, a number of improvements would be implemented together. Development and implementation would be spread over a number of years. The overall cost, benefit and pay-back period would be affected by these considerations.

C. THE COMBINING AND CALENDARIZATION OF PREFERRED SYSTEM IMPROVEMENTS

Because some improvements depend upon implementation of others, implementation strategy is constrained in some respects. This results in five major implementation packages:

- legal system improvements;
- microfilm document and plan systems;
- certification in the registry system;
- computerized indexes, property maps and activity reports; and
- selective and aggregate information reports.

TABLE 2- PREFERRED SYSTEM IMPROVEMENTS

PREFERRED IMPROVEMENT	Total One-Time Cost	Benefits (Yearly)		Delay Factor (Years)	Pay- Back (Years)
		Realizable	Net		
Legal Changes not Requiring Equipment Changes	633,000	360,000	360,000	1	2.8
Intelligent Cash Registers for Balancing Functions Only	176,000	11,250	(9,000)	0	-
Microfilm Processing	138,000	Ø	(6,760)	0	-
Automated Cartridge Microfilm System	2,531,680	351,700	290,785	1	9.7
Plan Microfilming	805,150	84,500	74,100	0	10.8
Standardized Shorter Documents and Cover Page	238,000	218,250	218,250	0	1.1
Property Map Preparation and Maintenance	11,355,170	375,000	99,240	2	116.4
Local Office Cash Register Data Capture and Enquiry Pads	1,811,100	69,450	(16,265)	0	-
Basic Operational Activity Reporting	218,500	78,000	32,325	0	6.8
Cross-reference Abstract Entry Data Capture (25%)	247,500	Ø	(33,475)	0	-
Cross-reference Indexes	474,000	Ø	(15,650)	0	-
Computerized Writs of Execution System	120,750	30,000	1,330	0	91
Complete Abstract Entry Data Capture for all Registrations	134,100	Ø	(26,420)	0	-
Complete Computerized Index Data Base (Regional)	84,950	Ø	(35,400)	0	-
Computer Produced Index Pages (Regional)	51,550	550,000	448,300	0	.11
Complete Operational Activity Reporting (Regional)	17,000	27,000	(6,750)	0	-
Selective and Aggregate Reporting for Bulk Users (Regional)	<u>89,350</u>	<u>Ø</u>	<u>(9,650)</u>	0	<u>-</u>
Total for Selected Improvements	19,125,550	2,155,150	1,364,960		14

The costs and benefits of each package must now be calendarized. The timing of capital outlays and benefit stream realization if the program is fully funded and all improvements are introduced as quickly as possible must be identified. A cost/benefit summary (in thousands of dollars), Figure 8, page 56, has been developed to show the yearly financial impact of implementing each package.

The content of this form should be described briefly.

A time horizon of 15 years has been allowed. Implementation of all the preferred improvements would be complete at the end of year 14. In the 15th and succeeding years, all costs would have stabilized to a continuous value.

The development, pilot project testing, implementation, operating cost and realizable benefits headings correspond to those from the detailed analysis documentation and cost benefit summary sheets. In each case, the total staff and equipment costs or benefits have been shown both individually and in total.

Cost avoidance was not recognized in the preliminary analysis of alternatives. Cost avoidance results from the elimination of the need to add staff or equipment as the registration volume increases. It can be properly analyzed only after the improvement has been calendarized. Only full complement positions were taken into account in determining realizable benefits. However, part complement position savings resulting from implementation of each package have also been identified. Part complement position savings are sufficient to avoid the addition of staff to handle volume increases over the full 15-year implementation period. This results in some under-utilization of staff during the 8th to 12th year and full utilization of staff in year 15.

Sub-totals for both costs and benefits have been included. The row labelled "Total" shows the net position for both staff and equipment and allows calculation of fringe benefits, which are taken as 13.2% of the staff net cost or benefit.

The next three headings analyze the financial impact of the improvement package. The net benefit (cost)/cumulative benefit figures are equivalent to calculation of the impact and pay-back period for the improvement in 1977 dollars.

The discounted cash flow (at 9%)/cumulative D.C.F. analyzes the improvements based on a cost of capital of 9%. In this analysis, the current bond rate (9%) was taken as a proxy for the provincial cost of capital.

The last analysis calculates the discounted cash flow (at 9%) including inflation (at 6%) and the cumulative discounted cash flow under these conditions. The effect of a 6% inflation rate on staff salaries and equipment costs as well as a discount for the anticipated cost of capital has been included as part of this analysis.

FIGURE 8 - COST BENEFIT SUMMARY FORM

COST - BENEFIT SUMMARY (IN \$1,000's)

COST AND BENEFITS	YEARS															TOTALS
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
DEVELOPMENT	STAFF															
	EQUIPMENT															
	TOTAL															
PILOT PROJECT TESTING	STAFF															
	EQUIPMENT															
	TOTAL															
IMPLEMENTATION	STAFF															
	EQUIPMENT															
	TOTAL															
OPERATING COSTS	STAFF															
	EQUIPMENT															
	TOTAL															
SUBTOTAL - COSTS	STAFF															
	EQUIPMENT															
	TOTAL															
REALIZEABLE BENEFITS	STAFF															
	EQUIPMENT															
	TOTAL															
COST AVOIDANCE	STAFF															
	EQUIPMENT															
	TOTAL															
SUBTOTAL - BENEFITS	STAFF															
	EQUIPMENT															
	TOTAL															
TOTAL	STAFF															
	FRINGE BENEFITS															
	EQUIPMENT															
NET BENEFIT (COST) CUMULATIVE BENEFIT																
DISCOUNTED CASH FLOW (AT 9%) CUMULATIVE D.C.F.																
D.C.F. INCLUDING INFLATION (AT 6%) CUMULATIVE D.C.F.																

In the following sections of this Chapter, the content and implementation strategy for each of the five major system improvement packages are discussed.

D. LEGAL SYSTEM IMPROVEMENTS

Many of the legal concepts that govern the land registration system can be improved. For some, only revision of the legislation is required. Implementation periods are short and there are no major changes to system equipment involved.

The legal system improvements not requiring equipment changes or major implementation effort include:

- amendments to The Registry Act to reduce the required search period and give immediate effect to discharges and expired interests;
- amendments to provide a more complete title record through registration of government liens and municipal clearance violations and removal of the title effect of Planning Act violations;
- clarification and improvement of the rules regarding title assurance, boundary assurance, adverse possession and compensation;
- selected changes to the law governing covenants and easements; and
- selected improvements to the provisions of The Land Titles Act governing cautions, notices and leases.

Other legal improvements are associated with the introduction of standardized, shorter documents and the cover page concept. These include:

- introducing a standardized cover page for all documents;
- shortening and standardizing common documents; and
- reducing the number of affidavits required.

The costs and benefits associated with this implementation package are shown in Table 9, page 58. The majority of the legislation affected is administered by the Division. Where legislation is administered by another ministry, time for the required liaison has been included in the estimate of development costs.

FIGURE 9 - LEGAL SYSTEM IMPROVEMENTS

COST — BENEFIT SUMMARY (IN \$1,000's)

PACKAGE: LEGAL SYSTEM IMPROVEMENTS

COST AND BENEFITS		YEARS														TOTALS
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
DEVELOPMENT	STAFF	120	112													
	EQUIPMENT	120	112													
	TOTAL	120	112													232
PILOT PROJECT TESTING	STAFF	15	15													
	EQUIPMENT	5	5													
	TOTAL	20	20													40
IMPLEMENTATION	STAFF	15	15													
	EQUIPMENT	61	61													
	TOTAL	76	76													152
OPERATING COSTS	STAFF															
	EQUIPMENT															
	TOTAL															
SUBTOTAL - COSTS	STAFF	120	127	15												
	EQUIPMENT	120	132	76												
	TOTAL	240	259	91												328
REALIZABLE BENEFITS	STAFF	66	510	510	510	510	510	510	510	510	510	510	510	510	510	510
	EQUIPMENT	66	510	510	510	510	510	510	510	510	510	510	510	510	510	510
	TOTAL	132	1020	1020	1020	1020	1020	1020	1020	1020	1020	1020	1020	1020	1020	1020
COST AVOIDANCE	STAFF	4	29	30	31	33	35	36	38	40	42	44	46	49	51	53
	EQUIPMENT	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66
	TOTAL	70	95	96	97	99	101	102	104	106	108	110	112	115	117	119
SUBTOTAL - BENEFITS	STAFF	70	539	540	541	543	545	546	548	550	552	554	556	559	561	563
	EQUIPMENT	70	539	540	541	543	545	546	548	550	552	554	556	559	561	563
	TOTAL	140	1078	1080	1084	1086	1090	1092	1096	1100	1104	1108	1112	1118	1122	1126
TOTAL	STAFF	(120)	(57)	524	540	541	543	545	546	548	550	552	554	556	559	561
	EQUIPMENT	(116)	(8)	69	71	71	72	72	72	73	73	73	73	74	74	74
	TOTAL	(236)	(65)	693	692	692	695	697	698	699	699	699	699	699	699	699
NET BENEFIT (COST)	STAFF	(120)	(57)	524	540	541	543	545	546	548	550	552	554	556	559	561
	EQUIPMENT	(116)	(8)	69	71	71	72	72	72	73	73	73	73	74	74	74
	TOTAL	(236)	(65)	693	692	692	695	697	698	699	699	699	699	699	699	699
DISCOUNTED CASH FLOW (AT 9%)	STAFF	(136)	(206)	326	1003	1681	2362	3045	3729	4415	5104	5795	6488	7183	7882	8583
	EQUIPMENT	(125)	(59)	411	480	441	406	374	343	316	291	268	246	227	209	192
	TOTAL	(261)	(265)	737	1483	2122	2768	3419	4072	4581	5095	5663	6234	6810	7391	8075
D.C.F. INCLUDING INFLATION (AT 6%)	STAFF	(133)	(167)	501	625	614	605	595	584	574	565	556	546	537	530	521
	EQUIPMENT	(133)	(200)	301	926	1540	2145	2740	3324	3898	4463	5019	5565	6102	6632	7153
	TOTAL	(266)	(367)	802	1551	2154	2750	3234	3708	4196	4628	5084	5555	6037	6562	7124

Development and testing of these legal changes would be completed within the first two years of the program. Implementation of the changes would occur on a province-wide basis at the beginning of the 3rd year. There are no on-going operating costs for these changes. No additional staff or equipment is required.

Because implementation occurs across the Province, the realizable benefit stream in terms of staff savings takes effect in year 3. These savings result primarily from a reduction in the number of documents which must be drawn and refiled for searching and from reduced clerical time for document examination and abstracting.

Cost avoidance for staff results because no additional staff is required to cope with increasing volumes. Cost avoidance for equipment is due to reduced filing and microfilming costs with shorter documents.

The package is extremely attractive in terms of rapid and substantial payback. The break-even point on a cumulative or discounted basis occurs at the end of year 2. Even on a full discounted basis, a cumulative benefit in excess of 4 million dollars is achieved over the 15-year implementation period.

In addition to substantial system savings, large benefits will be realized by system users. It is expected that system users would achieve a benefit of \$7,150,000 per year after introduction of this improvement package.

It is recommended that implementation of this package commence immediately.

E. MICROFILM DOCUMENT AND PLAN SYSTEMS

This package improves the record management systems for land registration. See Figure 10, page 63, Cost/Benefit Summary.

A copy of registered plans and documents, including signatures, should be available as evidence supporting registration activity. Therefore, the form of the plans and documents must be preserved. Two methods of storage retain the form and signatures.

- storage of the plans and documents in their paper form; and
- storage of a film or electronic image of the plans and documents.

The existing system stores original plans and documents in their paper form and provides these originals to users. Electronic storage, utilizing television cameras and video images is not practical at this time. Equipment costs, development costs and operating costs are unacceptably high.

Microfilm images of documents and plans are the only acceptable alternative to the present system. Microfilm requires less than 2% of the space required for paper storage. Retrieval of microfilm records is also considerably faster. Microfilm is now used by all offices, but only for archival storage.

There are three alternative document microfilm systems:

- non-parcelized microfiche;
- parcelized microfiche; and
- automated cartridge microfilm.

Non-parcelized document microfilm jackets are used in the Toronto and York South office. Here, a 4-inch by 6-inch jacket is used to accommodate five rows, each holding up to 12 frames, of 16 mm film. Thus a single jacket accommodates up to 60 document pages at a reduction ratio of 24:1. This system has proven acceptable to both office staff and users. However, to increase system security with this alternative, a microfiche copy, rather than the microfilm jacket should be provided to system users.

With a parcelized microfiche system, documents would be organized by land parcel on one or more microfiche. Otherwise, this option would be similar to the non-parcelized microfiche system.

The use of either parcelized or non-parcelized microfiche requires manual handling of microfilm jackets. This increases the operating cost of both methods. Further, implementation requires the jacketing of backlog microfilm resulting in a large one-time cost.

From a cost/benefit standpoint, the use of automated cartridge roll microfilm is preferable. A duplicate of the existing microfilm could be used directly with this system. Since manual handling is limited, both implementation and on-going costs are smaller than with the microfiche options.

The Toronto and York South office also use roll microfilm. Three major improvements to this existing system are proposed:

- cartridge rather than open reel microfilm should be provided to system users;

- microfilm readers should have high speed document location capability; and
- paper copies of the microfilm should be provided at low cost to reduce the time spent by users in examining documents on the readers.

Document microfilming should continue to take place in the local office. Microfilm processing should be performed in a regional centre. Three regional centres should be equipped to process microfilm. This provides the processing capability for the increased volumes expected during the implementation period.

Two rolls of microfilm would be produced during microfilm processing. One roll would be used for archival and security purposes. The other roll would be used as the document file.

The regional centre would insert the duplicate roll of microfilm into a microfilm cartridge. This cartridge would be labelled and indexed with the approximate location (odometer count) of registrations on the roll. Indexing is required to allow users to quickly locate the section of microfilm containing the information they need.

The indexed cartridge would then be returned to the local office. During the period from document registration to return of the microfilm cartridge, the original copy of the document would be retained in the local office. When the microfilm cartridge is received, the original document can be destroyed or returned to the user. No paper documents should be permanently stored in the local office.

Plans should also be microfilmed. However, 35 mm microfilm must be used to accommodate the larger sized plans. Microfilming of plans cannot economically be performed in the local office. This would require purchase of a 35 mm microfilm camera for each office. Because of the low plan registration volumes, only regional centres should have 35 mm microfilm cameras.

After registration, the plan should be microfilmed in the regional centre and the processed film used to prepare a microfilm jacket or aperture card. A microfiche duplicate of the jacketed plan, along with a number of paper prints, should be returned to the local office. The original copy of the plan can then be returned to the surveyor.

Each local office should be equipped with:

- one or more microfiche viewer/printers to be used for examining and copying microfiche plan records;
- one or more high speed cartridge roll microfilm reader/printers for examining and copying microfilm document records; and

- microfilm storage cabinets for document cartridges and plan microfiche.

Each regional centre should be equipped with:

- a microfilm processor capable of developing both 16 mm and 35 mm film;
- a microfilm duplicator;
- a 35 mm camera for microfilming plans;
- one or more high speed cartridge roll microfilm readers for indexing document locations on the cartridges;
- one or more microfilm jacket viewer/inserters for inserting microfilm images of plans into microfilm jackets or aperture cards;
- one or more microfiche printer/processors for producing microfiche copies of the updated jackets;
- roll film storage units and microfilm jacket storage units for storing document and plan microfilm; and
- a diazo printer to produce paper plan copies.

Development and testing of the microfilm systems is completed in the first year and a half of the program. Implementation is expected to take about two years. The microfilm equipment would be installed in all three regional centres in the first year. Conversion to a microfilm record system would then occur on an office-by-office basis over the two-year period.

This results in a gradual build-up of realizable benefits during years 2, 3 and 4 of the program. Similarly, there is a corresponding increase in cost avoidance savings during the same period.

The benefits of this package result primarily from staff reductions through elimination of the copying function and a greatly reduced filing and retrieval time. If users are given direct access to the document microfilm cartridges, staff filing and retrieval time could be almost eliminated. However, continued system control over records and, therefore, staff filing and retrieval cartridges have been assumed.

Potential equipment savings result from two factors. The need to purchase additional filing cabinets for paper documents is eliminated. The floor space required for document filing is significantly reduced.

FIGURE 10 - MICROFILM DOCUMENT AND PLAN SYSTEMS

COST — BENEFIT SUMMARY (IN \$1,000's)

MICROFILM DOCUMENT
PACKAGE: AND PLAN SYSTEMS

COST AND BENEFITS		YEARS														TOTALS
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
DEVELOPMENT	STAFF															
	EQUIPMENT															
	TOTAL	60														60
PILOT PROJECT TESTING	STAFF															
	EQUIPMENT															
	TOTAL	35														35
IMPLEMENTATION	STAFF															
	EQUIPMENT															
	TOTAL	40														40
OPERATING COSTS	STAFF															
	EQUIPMENT															
	TOTAL	92														92
SUBTOTAL — COSTS	STAFF	92														
	EQUIPMENT	745														
	TOTAL	837														1622
REALIZABLE BENEFITS	STAFF															
	EQUIPMENT															
	TOTAL	55														55
COST AVOIDANCE	STAFF															
	EQUIPMENT															
	TOTAL	4														4
SUBTOTAL — BENEFITS	STAFF	59														
	EQUIPMENT	56														
	TOTAL	115														115
TOTAL	STAFF	(95)														
	EQUIPMENT	(131)														
	TOTAL	(226)														(226)
NET BENEFIT (COST)	STAFF	(95)														
	EQUIPMENT	(131)														
	TOTAL	(226)														(226)
CUMULATIVE BENEFIT	STAFF	(113)														
	EQUIPMENT	(113)														
	TOTAL	(226)														(226)
DISCOUNTED CASH FLOW (AT 9%)	STAFF	(104)														
	EQUIPMENT	(104)														
	TOTAL	(208)														(208)
CUMULATIVE D.C.F.	STAFF	(110)														
	EQUIPMENT	(110)														
	TOTAL	(220)														(220)
D.C.F. INCLUDING INFLATION (AT 6%)	STAFF	(110)														
	EQUIPMENT	(110)														
	TOTAL	(220)														(220)

The combination of heavy expenditures early in the program and a gradual build up in benefit realization produces a pay-back for the improvement at the end of 7 years or, if discounted at 9%, at the end of 8 years.

At the end of the 15-year period, cumulative savings of between \$900,000 to \$3,400,000 are realized. This improvement package is, therefore, justified on the basis of system savings alone and is recommended for implementation.

F. CERTIFICATION IN THE REGISTRY SYSTEM

This improvement package results in another substantial user benefit. See Figure 11, page 65, Cost/Benefit Summary.

Certification in the registry system under The Certification of Titles Act provides an assured statement of ownership and encumbrances at a stated point in time. It eliminates the need for users to search beyond the point of certification. It can dramatically shorten and simplify searching. Certification of subdivision plans also eliminates the need to search in the unparcelized index books. This further reduces search time and system workload.

The land registration system benefits from a reduced staff workload in filing and retrieving. Also, the number of older records that must be retained in the office is reduced.

However, it will require about one year to develop and four years to implement this improvement. Development effort is primarily legal. Implementation effort is primarily clerical. A certification team is required to examine plans and documents and prepare statements of ownership and encumbrances.

The system benefit stream of certification will not be realized immediately. Only after certification of some areas is complete do benefits become significant. Thus, a gradual increase in benefits will occur during years 3, 4 and 5 for implementation of this package.

Since the benefit stream is relatively small, a net cost to the system results even at the end of the 15-year implementation period. However, this cost is relatively low. Certification simplifies the computerization package. It also produces a realizable benefit of about \$750,000 per year for system users. Therefore, implementation of the package is recommended.

FIGURE 11 - CERTIFICATION IN THE REGISTRY SYSTEM

COST — BENEFIT SUMMARY (IN \$1,000+)

PACKAGE: CERTIFICATION IN THE REGISTRY SYSTEM

COST AND BENEFITS	1	YEARS													TOTALS
		2	3	4	5	6	7	8	9	10	11	12	13	14	15
DEVELOPMENT															
STAFF	15														15
EQUIPMENT															
TOTAL	15														15
PILOT PROJECT TESTING															
STAFF															
EQUIPMENT															
TOTAL															
IMPLEMENTATION															
STAFF		132	132	132	132										528
EQUIPMENT															
TOTAL		132	132	132	132										528
OPERATING COSTS															
STAFF															
EQUIPMENT															
TOTAL															
SUBTOTAL - COSTS	15	132	132	132	132										543
STAFF	15	132	132	132	132										543
EQUIPMENT															
TOTAL	15	132	132	132	132										543
REALIZABLE BENEFITS															
STAFF			2	5	7	9	9	9	9	9	9	9	9	9	104
EQUIPMENT															
TOTAL			2	5	7	9	9	9	9	9	9	9	9	9	104
COST AVOIDANCE															
STAFF			1	2	4	5	5	6	6	6	7	7	7	8	72
EQUIPMENT															
TOTAL			1	2	4	5	5	6	6	6	7	7	7	8	72
SUBTOTAL - BENEFITS															
STAFF			3	7	11	14	14	15	15	15	16	16	16	17	176
EQUIPMENT															
TOTAL			3	7	11	14	14	15	15	15	16	16	16	17	176
TOTAL	(15)	(132)	(129)	(125)	(121)	(14)	(14)	(15)	(15)	(15)	(16)	(16)	(16)	(17)	(367)
FRINGE BENEFITS	(2)	(17)	(17)	(17)	(17)			2	2	2	2	2	2	2	130
EQUIPMENT															
NET BENEFIT (COST)	(17)	(149)	(146)	(142)	(138)	(16)	(16)	(17)	(17)	(18)	(18)	(18)	(18)	(19)	(417)
CUMULATIVE BENEFIT	(17)	(166)	(312)	(454)	(592)	(576)	(560)	(543)	(526)	(509)	(491)	(473)	(455)	(436)	(417)
DISCOUNTED CASH FLOW (AT 9%)	(16)	(125)	(113)	(101)	(90)	10	9	9	8	7	7	6	6	5	(372)
CUMULATIVE D.C.F.	(16)	(141)	(254)	(355)	(445)	(435)	(426)	(417)	(409)	(402)	(395)	(389)	(383)	(377)	(372)
D.C.F. INCLUDING INFLATION (AT 6%)	(16)	(140)	(134)	(126)	(119)	13	13	13	13	13	13	13	12	13	(407)
CUMULATIVE D.C.F.	(16)	(156)	(290)	(416)	(535)	(522)	(509)	(496)	(483)	(470)	(457)	(444)	(432)	(419)	(407)

G. COMPUTERIZED INDEXES, PROPERTY MAPS AND ACTIVITY REPORTS

This Section evaluates computerization of land registration information. See Figure 14, page 72.

Computers should be used for:

- property map preparation and maintenance; and
- local office automation.

Maps could be prepared manually or using computer-based techniques. Manual preparation of the initial property maps involves up to three times the cost of using computerized methods. Manual maintenance of property maps would cost over \$300,000 per year more.

A computer-based property mapping system is preferred. There are four major stages to automated property map preparation and maintenance:

- development of the necessary hardware and software techniques;
- pilot project testing by preparation of complete property maps for one medium sized office;
- relatively fast map preparation for the 70% of land parcels represented by existing plans, region by region; and
- verification of the descriptions of all land parcels and map preparation for the remaining 30% as soon as possible thereafter.

The transportation network geocode of the Ministry of Transportation and Communications can provide the information required for defining block boundaries by coordinates within each office area. This provides an accurate, controlled framework of blocks based on major roads and natural boundaries. Since it is referenced to the Ontario Coordinate System grid, it provides a base closely related to the ground. Each land parcel recorded in the office must be fitted into this controlled framework.

Seventy per cent of the land parcels in each office are illustrated on:

- plans previously registered in the office;
- plans readily available from other sources; and
- plans and sketches attached to documents.

After map preparation for this initial 70% of the land parcels, property maps could be introduced into the office. Identifying and mapping the remaining land parcels is a necessary, but somewhat lengthy process. There is no reason to withhold use of the property maps while this takes place.

Four years has been allowed for map completion for the remaining 30% of properties. To do this, the staff must:

- obtain the last registered deed for every land parcel within the area served by a local office;
- match the document description to the property map and modify the property map as required;
- for areas still in question, conduct an historical search of office records to determine land divisions;
- compare the property maps to aerial photography if available; and
- perform a field examination, if warranted, for areas where there are still problems.

As part of the property mapping process, unique land parcel identifiers would be assigned. Once this has been done, computerized processing of land parcel information becomes possible. All information entering the land registration system can be referenced to the land parcel it affects. The unique land parcel identifier can now become the legal description of the land parcel on the cover page (introduced with legal system improvements).

Since the original form of documents and plans must be preserved, a microfilm, rather than a computerized system is appropriate in that area. The original form of the record need not be preserved in the case of indexes. Therefore, computerized processing should be considered for the index records.

Computerized processing could take place at:

- the local offices;
- regional centres; or
- a central site.

Centralized processing is not recommended. Communications costs to meet the required service times for some functions would be unacceptably high.

Some services do not require immediate availability of information. However, even on a batch processing basis, the centralized computer processing option is more costly. Therefore, the use of centralized computers for any land registration system data processing is not recommended.

A total of 9 regional computer systems are proposed. Initially, each system would be used for property map preparation. Once the initial property maps are prepared, the regional systems would be used for property map maintenance, index production and information reporting. Index production and information reporting would be done on a batch, rather than an on-line basis. To make the most current information immediately available from the regional centres would require the use of terminals and communication lines from local offices to regional centres. It is less costly and more reliable for each local office to be provided with its own stand-alone minicomputer system.

The regional office computer configuration is illustrated in Figure 12, page 69. It consists of the following components:

- one or more interactive graphics terminals, for entering plan information and "fitting" land parcels;
- a small incremental plotter, to draw the sections of the property maps being updated;
- two magnetic tape drives, for storage of property map and registration information;
- a disc storage device, for storage of boundary information during data capture and fitting;
- a magnetic tape cassette reader, to read information forwarded from each local office;
- one or more abstract data entry terminals, to handle overflow or back-up data entry and local office information;
- a medium speed printer, for printing of reports; and
- a minicomputer processor, for controlling all other devices, computation and data file handling.

Each local office would also be provided with computer equipment. The basic office configuration is illustrated in Figure 13, page 70. It includes the following components:

- an intelligent cash register, for recording financial transactions and capturing registration data;
- one or more enquiry pads, for subsearching and verifying land parcel identifiers;
- one or more data entry terminals, for entering document and plan abstract information;
- a disc storage device, as the storage medium for local data files;

FIGURE 12
REGIONAL CENTRE
EQUIPMENT CONFIGURATION

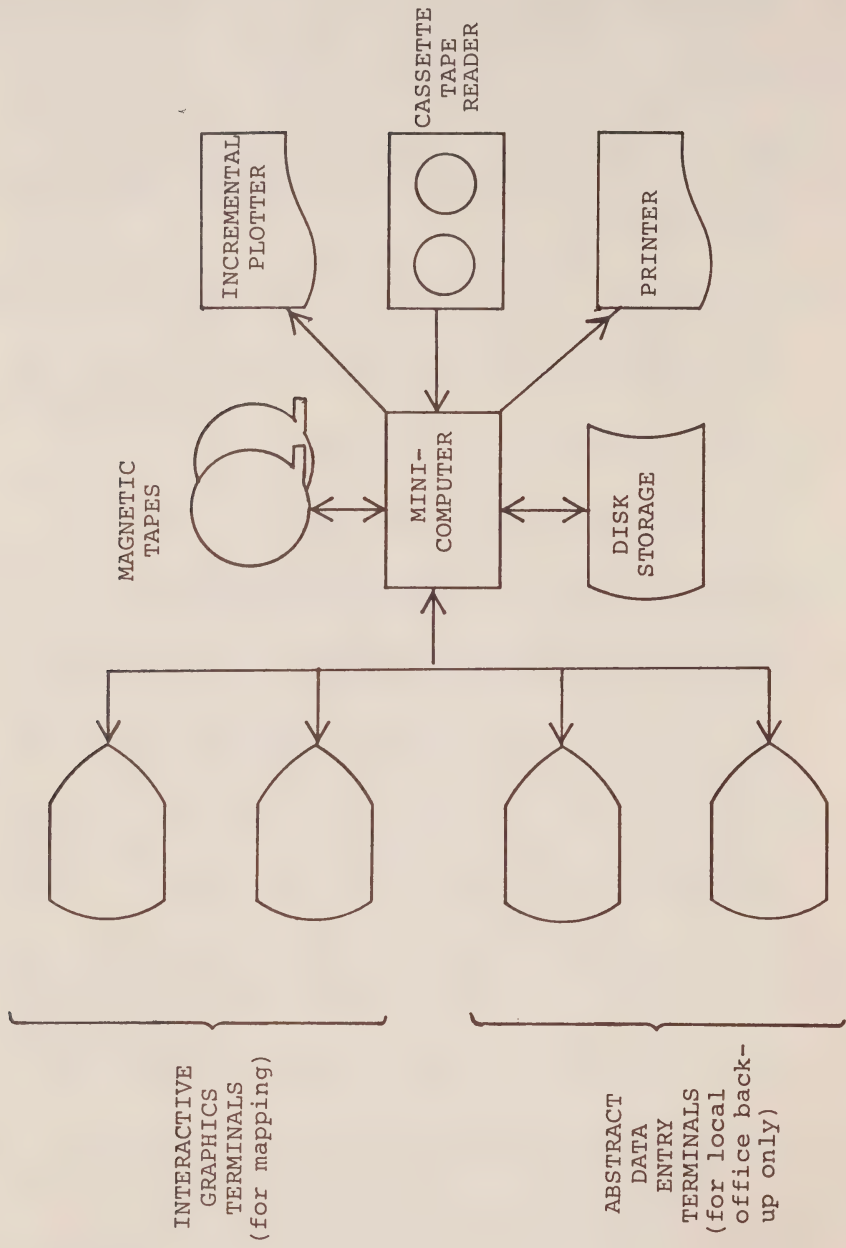
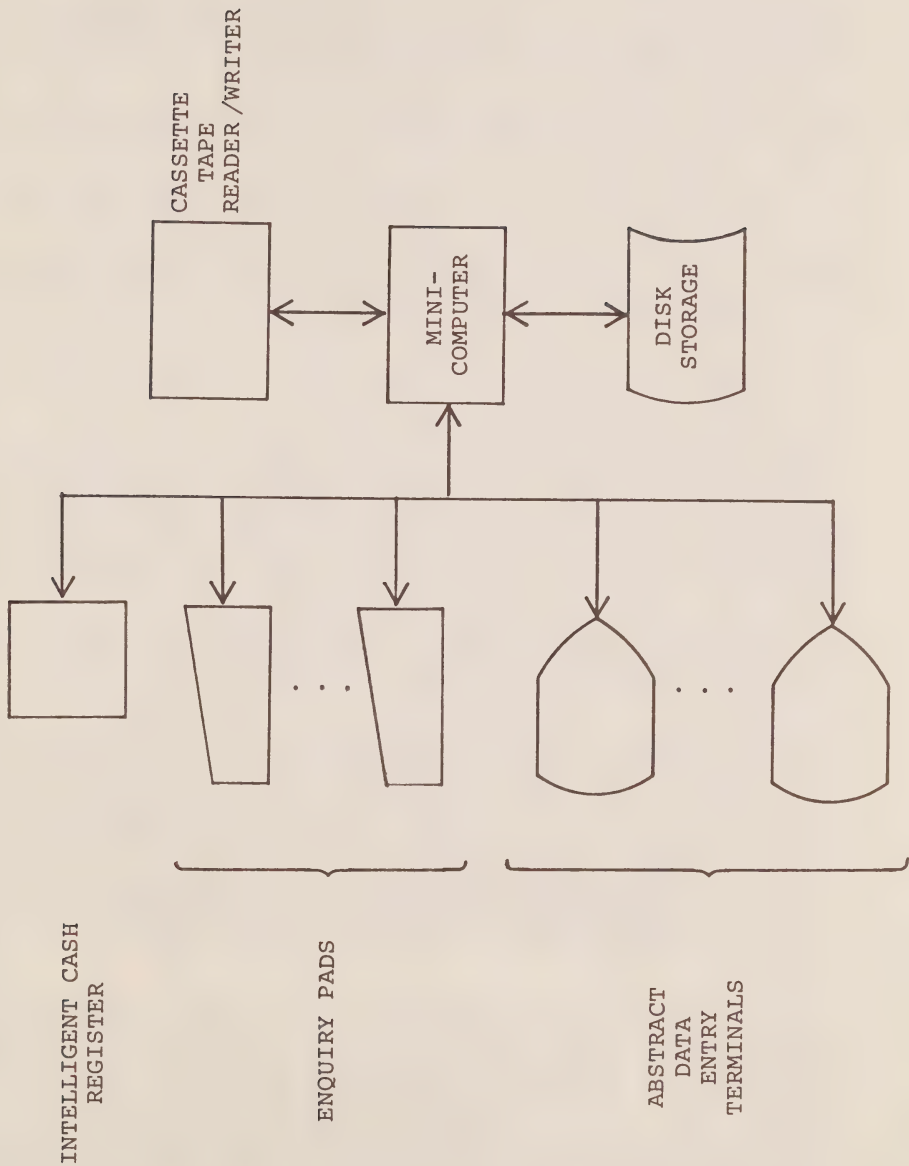


FIGURE 13
LOCAL OFFICE EQUIPMENT CONFIGURATION



- a cassette tape unit, to accumulate abstract and activity information and to provide back-up storage capability; and
- a minicomputer processor, for controlling all other components, performing data manipulation and file handling.

The handling of financial transactions, assignment of registration numbers and capturing of data upon registration are functions that cannot be regionalized.

All local files would be contained within the disc storage unit. Three types of information would be maintained:

- a land parcel file, containing one record for each land parcel within the office's jurisdiction;
- a registration journal, containing a record of each registration since the last update of the index pages; and
- a deposit account file, containing one record for each deposit or credit account user.

After payment of the required fee, the intelligent cash register terminal would automatically assign and print the registration number on the cover page of documents or plans accepted for registration. All pertinent registration data including fees, tax, registration date and type of document or plan, would also be captured by the cash register terminal.

After registration, a copy of the cover page would be made available for subsearching at the counter. A second copy of the cover page would be used for abstract data entry.

A data entry terminal with typewriter keyboard and display screen would be used by local office staff to transcribe information from the cover pages. This, and the activity information captured by the cash register, would be entered on a magnetic tape cassette. After verification and balancing at the end of the day, each local office would forward the cassette to a regional centre. This allows the regional centre to produce updated index pages for the registrations each day and activity reports on a daily, weekly, monthly, quarterly and annual basis.

As registrations are processed through the cash register, they automatically update the local office disc files. Enquiry pads would be available to both office staff and system users to obtain information from these local office files. Entering a land parcel identifier (block parcel number) on an enquiry pad would display the last registration processed against that land parcel. The display would also indicate if this registration took place after the last

FIGURE 14

COMPUTERIZED INDEXES, PROPERTY MAPS AND ACTIVITY REPORTS

COST — BENEFIT SUMMARY (IN \$,000's)

COMPUTERIZED INDEXES, PROPERTY
MAPS AND ACTIVITY REPORTS

COST AND BENEFITS	YEARS															TOTALS
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
DEVELOPMENT																
STAFF	174	235														409
EQUIPMENT	13	10														23
TOTAL	187	245														432
PILOT PROJECT TESTING																
STAFF		78	49													127
EQUIPMENT		220														220
TOTAL		298	49													347
IMPLEMENTATION												708			304	
STAFF	164	177	199	220	242	242	242	242	242	242	242	86	65	43	22	2186
EQUIPMENT	690	588	590	593	595	595	595	595	595	595	595	10	8	5	3	5388
TOTAL	854	765	789	813	837	837	837	837	837	837	837	96	73	48	25	7574
OPERATING COSTS																
STAFF		6	20	38	57	77	98	119	140	161	182	193	196	198	199	1684
EQUIPMENT		16	47	109	95	120	145	170	195	220	241	244	249	253	257	2361
TOTAL		22	67	147	152	197	243	289	335	381	423	437	445	451	456	4045
SUBTOTAL - COSTS																
STAFF	174	319	233	215	256	297	340	361	382	403	424	279	261	241	221	4406
EQUIPMENT	13	246	737	685	713	740	765	790	815	815	762	254	257	258	260	7992
TOTAL	187	565	970	912	941	1010	1080	1126	1172	1218	1186	533	518	499	481	12398
REALIZABLE BENEFITS																
STAFF			40	230	424	618	812	1006	1200	1394	1588	1704	1746	1746	1746	14254
EQUIPMENT			40	230	424	618	812	1006	1200	1394	1588	1704	1746	1746	1746	14254
TOTAL			80	460	848	1236	1624	2012	2400	2788	3176	3408	3492	3492	3492	28508
COST AVOIDANCE																
STAFF			3	13	25	38	52	68	86	104	125	141	151	159	167	1132
EQUIPMENT			2	2	2	2	2	2	2	2	2	2	2	2	2	11
TOTAL			5	15	27	40	54	70	88	106	127	143	153	161	169	1143
SUBTOTAL - BENEFITS																
STAFF			43	243	449	656	864	1074	1286	1498	1713	1845	1897	1905	1913	15386
EQUIPMENT			2	2	2	2	2	2	2	2	2	2	2	2	2	11
TOTAL			45	245	451	658	866	1076	1288	1500	1715	1847	1899	1907	1915	15397
TOTAL																
STAFF BENEFITS	(174)	(319)	(233)	(215)	(256)	(297)	(340)	(361)	(382)	(403)	(424)	(279)	(261)	(241)	(221)	(4406)
FRINGE BENEFITS	(23)	(42)	(25)	(4)	(25)	(47)	(69)	(94)	(119)	(145)	(170)	(207)	(216)	(220)	(223)	(1449)
EQUIPMENT	(13)	(246)	(737)	(685)	(713)	(740)	(765)	(790)	(815)	(815)	(762)	(254)	(257)	(258)	(260)	(7898)
NET BENEFIT (COST)	(210)	(607)	(952)	(663)	(464)	(303)	(141)	49	241	434	708	1530	1606	1637	1666	4531
CUMULATIVE BENEFIT	(210)	(817)	(1769)	(2432)	(2896)	(3199)	(3340)	(3291)	(3050)	(2616)	(1908)	(378)	1228	2865	4531	4531
DISCOUNTED CASH FLOW (AT 9%)	(197)	(511)	(735)	(470)	(302)	(181)	(77)	25	111	183	274	544	524	490	457	135
CUMULATIVE D.C.F.	(197)	(708)	(1443)	(1913)	(2215)	(2396)	(2473)	(2448)	(2337)	(2154)	(1880)	(1336)	(812)	(322)	135	135
D.C.F. INCLUDING INFLATION (AT 6%)	(204)	(572)	(871)	(589)	(400)	(254)	(115)	39	185	323	511	1073	1094	1082	1069	2371
CUMULATIVE D.C.F.	(204)	(776)	(1647)	(2236)	(2636)	(2890)	(3005)	(2966)	(2781)	(2458)	(1947)	(874)	220	1302	2371	2371

update of the index records. If so, a subsearch would be required. Display of the last registration number allows simple and fast retrieval of cover page information from the cover page subsearch file.

Updating of land parcel information takes place as soon as the registration is processed by the cash register. Thus, the system user can be assured of up-to-date information when doing a subsearch. Moreover, if registrations have occurred since the last update of the index books, enquiry pads provide direct access to the cover pages which affect the land parcel being searched.

Introduction of computerized indexes, property maps and activity reports dramatically affect both system users and local office staff. Much of the clerical effort in the local office is eliminated. System users can easily and quickly locate land parcels and determine the status of title. The entire process of dealing with the land registration system is simplified.

Development and testing of the local office and regional computer systems would take place in the first two years of the program. Implementation requires the next 12 years to complete.

A total of 9 regional centre computers would be installed. One system would be installed in each of years 3 through 10. Within each region, the property maps for 70% of the land parcels and the local office minicomputer system would be installed in each office served by the regional centre within one year of regional centre computer installation. Completion of the property maps for each office requires map preparation for the remaining 30% of land parcels. For each region, this would be complete within four years of regional centre computer installation. Local office staff would be used for the searching necessary to complete the maps. Implementation of other improvements will have freed sufficient clerical time to allow this activity to be absorbed by existing staff in each office.

Since implementation extends over a 13-year period, there is a corresponding delay in realization of the full benefit stream from this improvement. However, benefits will be realized progressively over this period on a region-by-region basis since the majority of local office computerization takes place in the same year that a regional centre computer is installed.

Realizable benefits and cost avoidance both result primarily from a reduction in clerical activities within the local office.

System pay-back occurs at the end of year 12 or year 14, depending upon the financial analysis method chosen. In either case, a significant benefit stream continues from

year 15 on. Although a large investment is required for implementation of this package, it greatly simplifies operation of the land registration system and provides significant benefits to both users and system staff. Therefore, implementation of this package is recommended.

H. SELECTIVE AND AGGREGATE INFORMATION REPORTS

The improvements described in previous sections have been concerned primarily with upgrading existing services. Some additional services could also be offered by an improved land registration system. See Figure 15, page 75.

The new services includes:

- cross-reference indexes, to relate commonly used identifiers such as street addresses and owner names to the land parcel identifiers;
- a computerized writs of execution system, to allow judgement creditors to easily and quickly locate the land of their debtors;
- complete operational activity reporting, to allow efficient statistical analysis of land parcel information; and
- selective and aggregate reporting for bulk users, to allow specialized searching and provide on-demand reporting of either property map or registration information.

None of these services are currently offered by the system. All depend upon computerized records for property maps and registration information. Therefore, development and implementation can occur only after computerized indexes, property maps and activity reports are in place in at least one region. The service would be extended region-by-region from year 4 to year 11 and would not be available on a province-wide basis until the beginning of year 12.

Cross-reference indexes would be used to link other common identifiers and owners' names to unique land parcel identification numbers. It is primarily a benefit to users. The users can more quickly and easily locate the information required for dealing with the land registration system.

The computerized writs of execution system is designed to allow judgement creditors to locate easily and quickly any land holdings of their debtors. It also allows judgement creditors to receive notice of any future land acquisitions by their debtors. Other system users will also benefit with implementation of this improvement. It eliminates the writs search for the purchaser and the name clearance problem for the vendor. Therefore, it greatly facilitates the conveyancing process at the time of closing.

FIGURE 15

SELECTIVE AND AGGREGATE INFORMATION REPORTS

COST — BENEFIT SUMMARY (IN \$1,000s)

SELECTIVE AND AGGREGATE
PACKAGE: INFORMATION REPORTS

COST AND BENEFITS		YEARS															TOTALS
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
DEVELOPMENT	STAFF																
	EQUIPMENT	6	23	106	78	17											230
	TOTAL	6	23	106	78	17											230
PILOT PROJECT TESTING	STAFF																
	EQUIPMENT																37
	TOTAL																37
IMPLEMENTATION	STAFF																
	EQUIPMENT																478
	TOTAL																478
OPERATING COSTS	STAFF																
	EQUIPMENT																721
	TOTAL																809
SUBTOTAL - COSTS	STAFF	6	23	106	166	172	96	103	110	117	124	131	78	78	78	78	1466
	EQUIPMENT																88
	TOTAL	6	23	106	167	172	100	109	117	125	133	141	88	88	88	88	1554
REALIZABLE BENEFITS	STAFF																
	EQUIPMENT																254
	TOTAL																254
COST AVOIDANCE	STAFF																
	EQUIPMENT																73
	TOTAL																73
SUBTOTAL - BENEFITS	STAFF																
	EQUIPMENT																48
	TOTAL																48
TOTAL	STAFF	6	23	106	165	167	85	88	89	92	94	94	36	32	30	30	1139
	EQUIPMENT	6	23	106	166	168	96	103	110	117	125	133	78	78	78	78	1503
	TOTAL	12	46	212	331	335	181	191	199	209	219	227	114	110	108	108	2642
NET BENEFIT (COST) CUMULATIVE BENEFIT	STAFF																
	EQUIPMENT																
	TOTAL																
DISCOUNTED CASH FLOW (AT 9%) CUMULATIVE D.C.F.	STAFF																
	EQUIPMENT																
	TOTAL																
D.C.F. INCLUDING INFLATION (AT 6%) CUMULATIVE D.C.F.	STAFF																
	EQUIPMENT																
	TOTAL																

Complete operational reporting provides the ability to scan and manipulate index records. For example, the index data base could be scanned to determine:

- the number of land parcels with mortgages over a certain amount;
- the number of land parcels owned by non-residents;
- the number of years before the average land parcel is transferred; or
- the number of joint tenancies.

Other government agencies are most likely to benefit from this service. Introduction of the improvement provides a faster response time and a larger quantity of readily available information from the system. Requests for information can be serviced easily and quickly from the computer system. This is impractical with the current manual system.

Selective and aggregate reporting for bulk users allows scanning and reporting on both index and map information. For example, the property map information could be used to determine all land parcels within a geographic area. The information obtained could then be used to extract owner name and address information from the index files. This is an important new service for many system users. Currently, users must maintain duplicate files of land registration information in order to approximate provision of this service. Elimination of these duplicate files would result in significant savings for system users, particularly other government agencies.

Much of the early development effort results from liaison with other affected ministries regarding changes to the writs of execution system. The majority of development and testing is completed during years 3 and 4.

The implementation program depends upon regional computer installation and, therefore, extends through years 3 to 11. Since this service is not currently offered, there are few realizable benefits. Savings from realizable benefits and cost avoidance result primarily from elimination of the writs file search in the land titles system and manual report preparation by local office staff.

Since new service fee revenue has not been considered in the analysis, this improvement is shown as an increasing cost throughout the 15-year analysis period. However, a modest fee structure for each new service could be used to finance implementation of this package.

These are new services. Therefore, implementation will be primarily a policy rather than a financial decision. Since the package can be self-financing and, if desired, generate new revenue, and since significant system and user benefits will result, implementation of the package is recommended.

I. THE OVERALL FINANCIAL IMPACT

Prior sections dealt with the financial impact of the individual improvement packages. In this Section, the overall impact of implementing all five improvements is discussed.

Figure 16, page 78, Annual Cash Flow diagram, illustrates the undiscounted cash flow for each of the improvement packages over the 15-year period. The magnitude and timing of both costs and benefits are shown for each package. Positive cash flows for both legal system improvements and microfilm document and plan systems commence early in the program. The large cash positive flows associated with computerization do not commence until late in the program.

User reporting has a negative cash flow. However, this is small in comparison to both the associated implementation cost and the benefit streams for the other improvements.

Figure 17, page 79, The Overall Cost/Benefit Summary, consolidates the cost/benefit information for each of the five improvement packages. The financial impact of implementing all five packages as quickly as possible is illustrated. In terms of system savings, the implementation cost is fully recovered in the ninth year. On a cumulative basis, considering both inflation and the cost of capital, a system operating benefit in excess of \$10,000,000 is achieved over the 15-year period.

A graphic representation of the overall financial impact on an annual cash flow basis is presented in Figure 18, page 80. Here, the three methods of financial analysis are presented. Straight cash flow is shown in the top graph. Discounting at 9% is shown in the middle section and discounting at 9% with a 6% inflation factor is shown in the bottom section.

Figure 19, page 81, illustrates the cumulative cash flow position. The break-even year is the point at which the net cost becomes a net benefit. Again, the figures are presented for undiscounted cash flow, discounted at 9% and discounted at 9% but including 6% inflation. The overall break-even point will occur in the 9th or 10th year depending upon the financial analysis method chosen.

System improvements could also be implemented on a phased start-up basis. Additional funding for development and implementation of only the legal package might be granted.

FIGURE 16 - ANNUAL CASH FLOW (IN \$ MILLIONS)

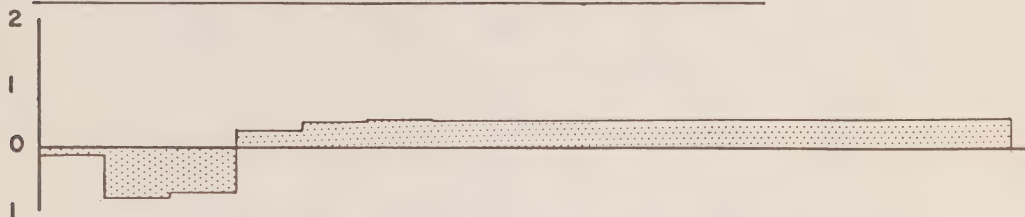
(A) LEGAL SYSTEM IMPROVEMENTS

YEAR

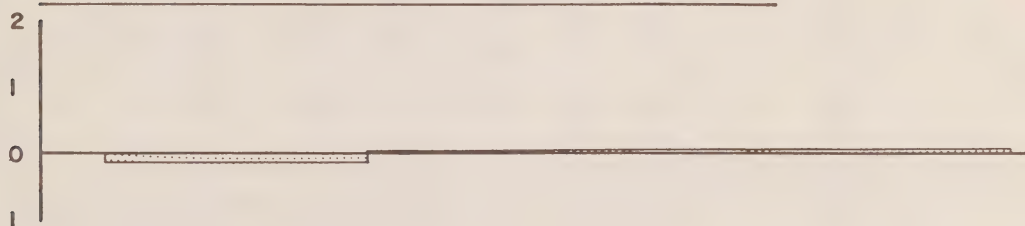
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15



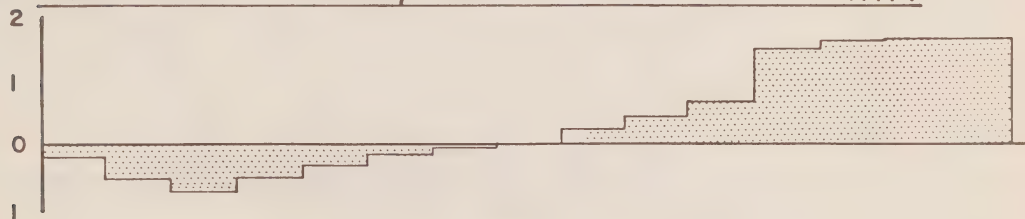
(B) MICROFILM DOCUMENT AND PLAN SYSTEMS



(C) CERTIFICATION IN THE REGISTRY SYSTEM



(D) COMPUTERIZED INDEXES, PROPERTY MAPS AND ACTIVITY



(E) SELECTIVE AND AGGREGATE INFORMATION REPORTS

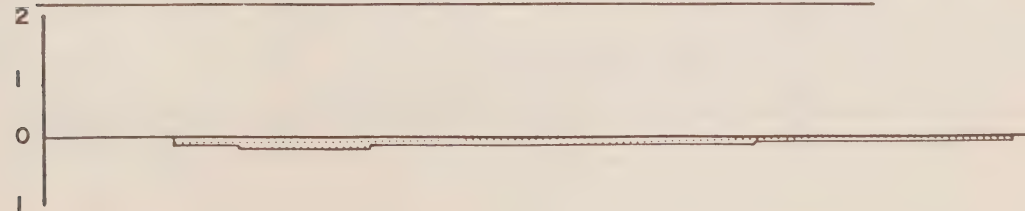


FIGURE 17
OVERALL COST BENEFIT SUMMARY

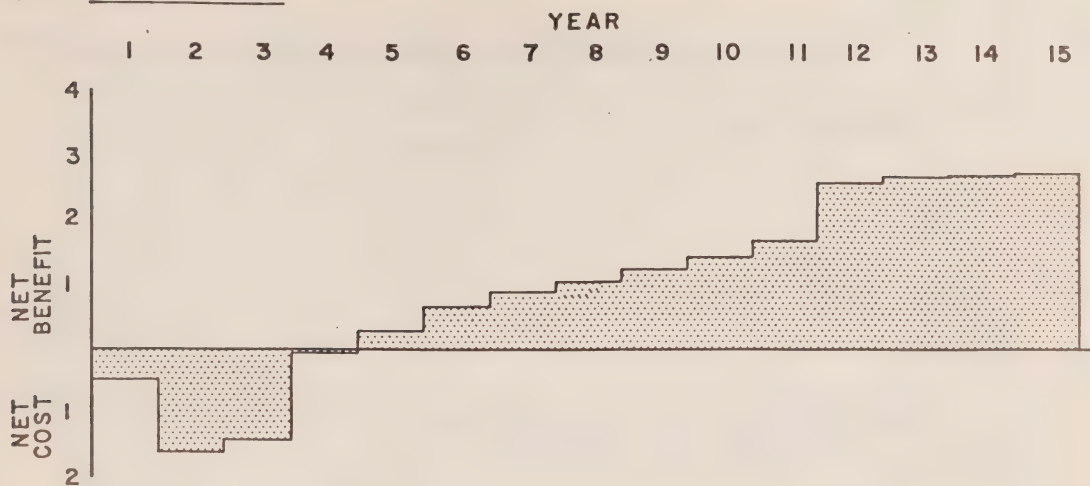
COST — BENEFIT SUMMARY (IN \$1,000's)

PACKAGE: ALL

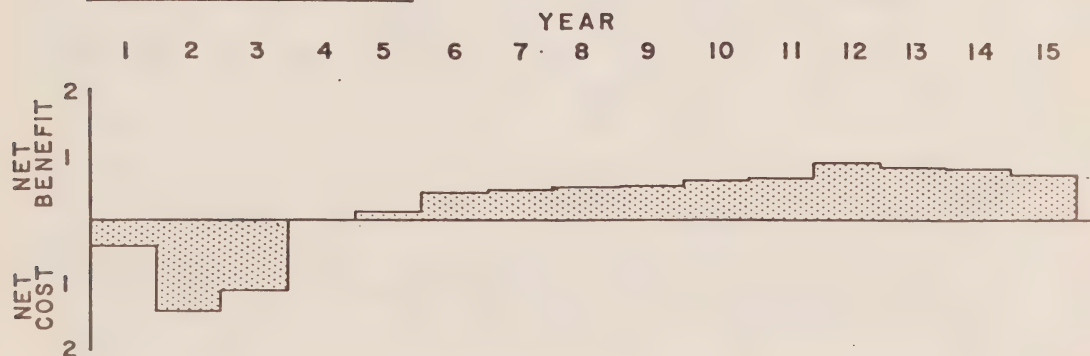
COST AND BENEFITS	YEARS														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
DEVELOPMENT															
STAFF	375	370	106	78	17										
EQUIPMENT	13	80													
TOTAL	388	450	106	78	17										946
PILOT PROJECT TESTING															23
STAFF	35	93	49	25	12										
EQUIPMENT	5	225													
TOTAL	40	318	49	25	12										214
IMPLEMENTATION															444
STAFF	224	224	386	365	440	273	295	295	295	295	295	86	65	43	22
EQUIPMENT	745	1529	654	623	593	593	595	595	595	595	521	10	8	5	3
TOTAL	969	1953	1040	988	1033	866	890	890	890	890	816	96	73	48	25
OPERATING COSTS															10450
STAFF	10	27	55	100	127	155	183	211	239	267	278	278	281	283	284
EQUIPMENT	56	127	190	178	204	231	257	283	309	336	363	390	417	443	469
TOTAL	66	154	245	278	331	386	440	494	548	603	646	678	701	726	753
SUBTOTAL - COSTS	410	597	568	573	569	400	450	478	506	534	562	364	346	326	306
EQUIPMENT	18	1036	1656	844	801	797	826	852	878	904	852	344	347	348	350
TOTAL	428	1733	2224	1367	1370	1197	1276	1330	1384	1438	1414	708	693	674	656
REALIZABLE BENEFITS															10853
STAFF	121	670	746	1182	1382	1580	1778	1976	2174	2373	2493	2537	2538	2538	24088
EQUIPMENT	2	20	37	40	40	40	40	40	40	40	40	40	40	40	40
TOTAL	121	672	766	1222	1422	1620	1818	2016	2214	2413	2533	2577	2578	2578	24128
COST AVOIDANCE															21547
STAFF	8	12	59	81	92	117	121	165	182	209	229	245	259	271	2097
EQUIPMENT	34	34	256	257	258	260	261	262	263	265	265	265	265	265	3236
TOTAL	8	46	315	338	357	377	382	427	445	474	494	510	524	536	5333
SUBTOTAL - BENEFITS															
STAFF	129	712	987	1263	1481	1697	1915	2134	2356	2582	2722	2782	2782	2782	26367
EQUIPMENT	96	276	294	298	300	301	302	303	304	305	305	305	305	305	305
TOTAL	129	808	1263	1557	1779	1997	2216	2437	2659	2887	3027	3087	3102	3114	30662
TOTAL	(410)	(568)	143	484	694	1081	1347	1421	1635	1822	2070	2358	2436	2471	19328
STAFF	(55)	(12)	19	61	80	143	164	205	209	242	267	311	321	326	330
FRINGE BENEFITS	(18)	(1038)	(3560)	(568)	(507)	(493)	(526)	(551)	(576)	(601)	(547)	(39)	(42)	(43)	(45)
EQUIPMENT	(483)	(1679)	(1397)	(43)	277	725	885	1075	1268	1463	1740	2630	2715	2754	2788
NET BENEFIT (COST)	(483)	(2162)	(3559)	(3602)	(3325)	(2600)	(1715)	(640)	628	2091	3831	6461	9176	11930	14718
CUMULATIVE BENEFIT															14718
DISCOUNTED CASH FLOW (AT 9%)	(448)	(1413)	(1079)	(31)	179	433	485	540	584	617	674	934	886	825	764
CUMULATIVE D.C.F.	(448)	(1861)	(2940)	(2971)	(2792)	(2359)	(1874)	(1334)	(750)	(133)	541	1475	2361	3186	3950
D.C.F. INCLUDING INFLATION (AT 6%)	(470)	(1584)	(1265)	(14)	268	641	759	893	1020	1141	1313	1905	1913	1889	1860
CUMULATIVE D.C.F.	(470)	(2054)	(3319)	(3333)	(3065)	(2424)	(1665)	(772)	248	1389	2702	4607	6520	8409	10269

FIGURE 18 - ANNUAL CASH FLOW (IN \$ MILLIONS)

(A) UNDISCOUNTED



(B) DISCOUNTED AT 9%



(C) INCLUDING 6% INFLATION

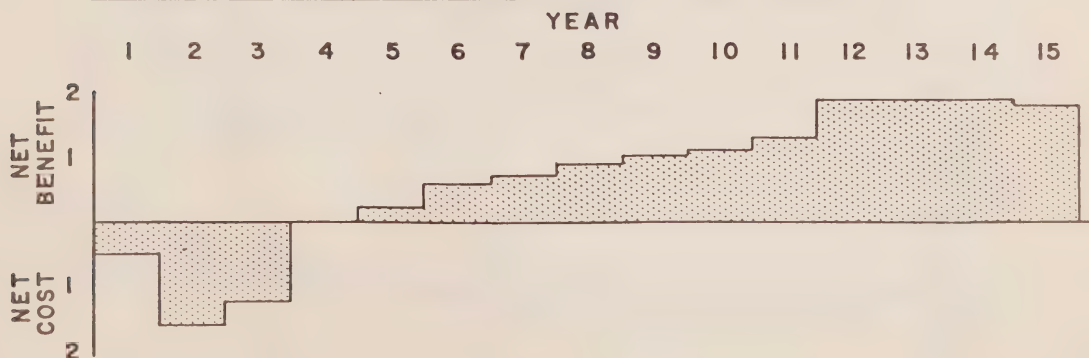
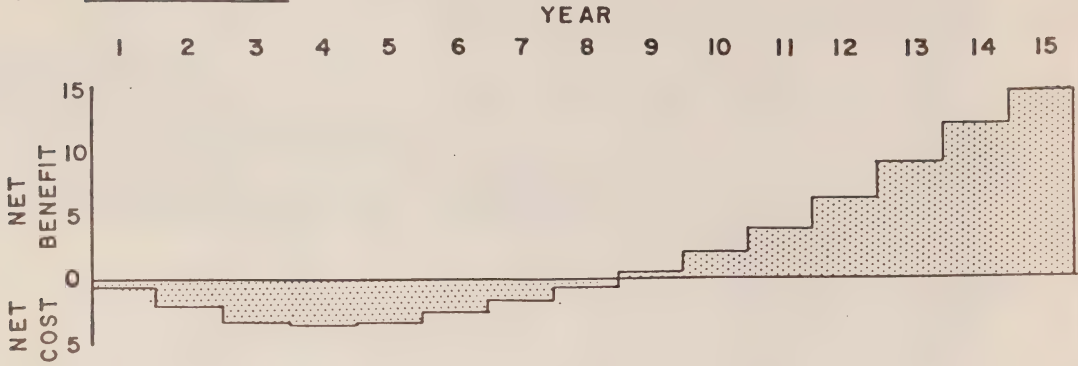
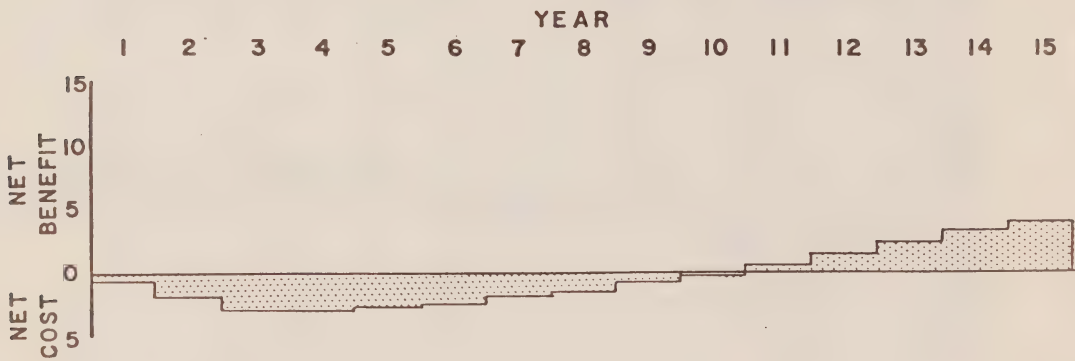


FIGURE 19 - CUMULATIVE CASH FLOW (IN \$ MILLIONS)

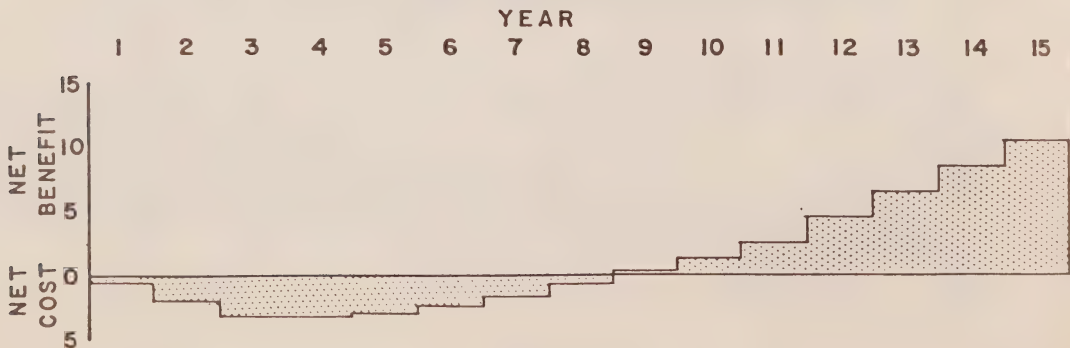
(A) UNDISCOUNTED



(B) DISCOUNTED AT 9%



(C) INCLUDING 6% INFLATION



The system savings obtained from implementation of this package could then be used to finance implementation of subsequent packages. The financial impact of this implementation strategy is shown in Figure 20, page 83. It extends the implementation period over a 20-year time horizon.

These two examples set the financial and time limits for implementation discussion. The first case establishes the minimum time for system implementation. The second case establishes the minimum investment for system implementation. Within these bounds, a practical, middle course implementation strategy can be selected.

For illustration, one further analysis has been performed. Figure 21, page 84, presents the cost/benefit summary with an assumed funding of \$500,000 per year for each of the first four years of the program. In subsequent years, the savings achieved from system improvements have been used to finance completion of the improvement program.

These analyses have been concerned with the incremental effect on operating cost. The relationship of investment and benefits to operating cost for each of the three cases is shown in Figure 22, page 85. Here, the effect of each of the three implementation strategies is illustrated. In each case, it is assumed that operational cost savings are available to finance implementation. Essentially, this means that the current operating budget level is maintained until financing of the one-time costs of implementation is complete.

It must be recognized that the figures presented represent feasibility study estimates. The actual costs and benefits may vary somewhat from these estimates. Recognizing this, a conservative approach to cost/benefit analysis was taken. In areas of uncertainty, costs were increased or benefits substantially discounted. Actual costs should be lower than estimated and actual benefits should be higher. The eventual results should be more favourable than shown in the analysis.

J. IMPLEMENTATION STRATEGY

In terms of small initial investment and rapid payback, the most attractive implementation plan is that of funding the improvement program at \$500,000 per year for each of the first four years. This represents an increase of about 4% in the operating budget for the first four years and a reduction of 20% of the projected operating budget in the 15th year. Assuming these funds are available, implementation strategy would be as follows:

FIGURE 20 - FUNDING LEGAL PACKAGE ONLY

COST — BENEFIT SUMMARY (IN \$,000's)

PACKAGE: ALL
Funding: (\$200,000 in years 1 and 2)

COST AND BENEFITS			YEARS																				TOTALS	
			136	70	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		19
DEVELOPMENT	STAFF																							
	EQUIPMENT																							
	TOTAL	120	112	60			15	180	258	106	78	17												
PILOT PROJECT TESTING	STAFF																							
	EQUIPMENT																							
	TOTAL		15	35					78	49	25	12												
IMPLEMENTATION	STAFF																							
	EQUIPMENT																							
	TOTAL		20	40					220															
OPERATING COSTS	STAFF																							
	EQUIPMENT																							
	TOTAL																							
SUBTOTAL - COSTS	STAFF																							
	EQUIPMENT																							
	TOTAL	120	132	177	881	955	481	842	1295	1203	1197	1276	1330	1384	1438	1444	1488	1532	1586	1640	1694	1748	1802	1856
REALIZABLE BENEFITS	STAFF																							
	EQUIPMENT																							
	TOTAL		66	510	565	608	692	749	792	885	1184	1382	1580	1778	1976	2174	2373	2493	2537	2538	2538	2538	2538	2538
COST AVOIDANCE	STAFF																							
	EQUIPMENT																							
	TOTAL		4	29	34	41	48	58	65	82	103	124	148	173	201	230	262	287	310	326	341	356	371	386
SUBTOTAL - BENEFITS	STAFF																							
	EQUIPMENT																							
	TOTAL		4	29	100	160	224	274	312	349	388	427	466	505	544	583	622	661	700	739	778	817	856	895
TOTAL	STAFF																							
	EQUIPMENT																							
	TOTAL	70	539	599	669	740	807	857	1057	1287	1506	1728	1951	2177	2404	2635	2780	2847	2864	2864	2864	2864	2864	2864
NET BENEFIT (COST)	STAFF																							
	EQUIPMENT																							
	TOTAL	(120)	(57)	429	503	572	648	724	799	874	949	1024	1100	1175	1250	1325	1400	1475	1550	1625	1700	1775	1850	1925
CUMULATIVE BENEFIT	STAFF																							
	EQUIPMENT																							
	TOTAL	(120)	(140)	(151)	(167)	(1719)	(639)	115	(68)	(526)	(485)	(474)	(502)	(529)	(554)	(579)	(604)	(630)	(655)	(680)	(705)	(730)	(755)	(780)
DISCOUNTED CASH FLOW (AT 9%)	STAFF																							
	EQUIPMENT																							
	TOTAL	(136)	(70)	419	(150)	(48)	588	299	(97)	134	490	750	918	1113	1313	1513	1713	1913	2113	2313	2513	2713	2913	3113
CUMULATIVE D.C.F.	STAFF																							
	EQUIPMENT																							
	TOTAL	(136)	(206)	213	63	15	603	902	805	939	1429	2179	3097	4210	5523	7036	8833	11526	14312	17139	20004	22831	25658	28485
D.C.F. INCLUDING INFLATION (AT 6%)	STAFF																							
	EQUIPMENT																							
	TOTAL	(125)	(59)	324	(106)	(31)	351	164	(49)	62	207	291	326	363	393	415	453	482	511	540	569	598	627	656
CUMULATIVE D.C.F.	STAFF																							
	EQUIPMENT																							
	TOTAL	(125)	(184)	140	34	3	354	518	469	531	738	1029	1355	1718	2111	2526	2979	3601	4192	4742	5253	5764	6275	6786
D.C.F. INCLUDING INFLATION (AT 6%)	STAFF																							
	EQUIPMENT																							
	TOTAL	(132)	(66)	383	(133)	(41)	492	243	(77)	103	365	542	644	758	868	971	1120	1629	1636	1612	1586	1560	1534	1508
CUMULATIVE D.C.F.	STAFF																							
	EQUIPMENT																							
	TOTAL	(132)	(198)	185	52	11	503	746	669	772	1137	1679	2323	3081	3949	4920	6040	7669	9305	10917	12503	14089	15675	17261

FIGURE 21

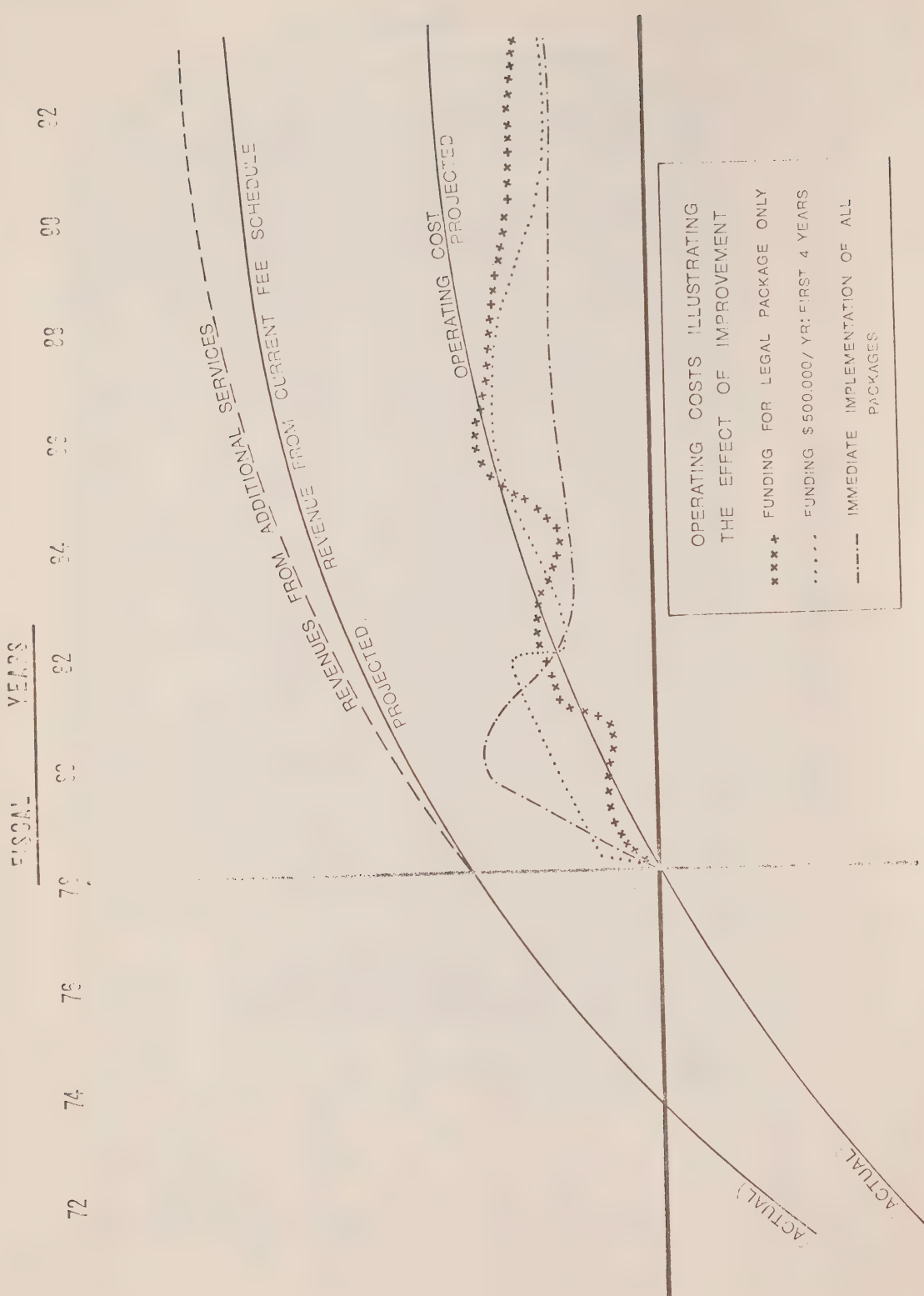
FUNDING \$500,000 / YR : FIRST 4 YEARS

COST — BENEFIT SUMMARY (IN \$1,000's)

PACKAGE: ALL
Funding: (\$500,000 in years 1 through 4)

COST AND BENEFITS	YEARS															TOTALS
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
DEVELOPMENT																
	STAFF															
	EQUIPMENT															
TOTAL	388	380	106	78	17											969
PILOT PROJECT TESTING																
	STAFF															
	EQUIPMENT															
TOTAL	40	20	347	25	12											444
IMPLEMENTATION																
	STAFF															
	EQUIPMENT															
TOTAL	94	584	1129	722	971	1334	1548	1570	1058	149	126	101	25			9,411
OPERATING COSTS																
	STAFF															
	EQUIPMENT															
TOTAL	1	45	91	131	189	278	352	473	579	604	620	626	631	631	631	5,251
SUBTOTAL - COSTS																
	STAFF	410	454	365	308	248	377	472	726	804	795	410	399	379	306	284
	EQUIPMENT	18	41	717	1015	634	783	1140	1174	1239	842	343	347	348	350	347
TOTAL	428	495	1082	1323	882	1160	1612	1900	2043	1637	753	746	727	656	611	16,075
REALIZABLE BENEFITS																
	STAFF															
	EQUIPMENT															
TOTAL	68	537	629	830	1010	1221	1501	1893	2096	2524	2571	2575	2577	2578	2578	22,610
COST AVOIDANCE																
	STAFF															
	EQUIPMENT															
TOTAL	4	52	201	271	316	346	370	407	465	479	497	510	518	534	534	4,970
SUBTOTAL - BENEFITS																
	STAFF	72	568	659	854	1041	1270	1572	1999	2256	2698	2763	2780	2790	2807	24,129
	EQUIPMENT	8	21	172	285	297	297	299	301	305	305	305	305	305	305	3,452
TOTAL	80	589	831	1101	1326	1567	1871	2300	2561	3003	3068	3085	3095	3112	27,581	
TOTAL																
	STAFF	(410)	(382)	(203)	(351)	(606)	(664)	(798)	(846)	(1195)	(1461)	(2288)	(2364)	(2401)	(2484)	(2533)
	FRINGE BENEFITS	(54)	(50)	(27)	(46)	(80)	(88)	(105)	(112)	(158)	(193)	(302)	(312)	(317)	(328)	(333)
EQUIPMENT	(18)	(41)	(694)	(834)	(4382)	(493)	(843)	(975)	(938)	(527)	(38)	(42)	(43)	(45)	(45)	(5,877)
NET BENEFIT (COST)	(422)	(473)	(466)	(447)	(482)	(493)	(843)	(975)	(938)	(527)	(38)	(42)	(43)	(45)	(45)	(5,877)
CUMULATIVE BENEFIT	10	27	38	54	299	254	60	83	415	1117	2552	2634	2675	2767	2814	13,802
DISCOUNTED CASH FLOW (AT 9%)																
	STAFF	(482)	(955)	(1421)	(1868)	(1569)	(4215)	(1255)	(1172)	757	360	2912	5546	8221	10988	13802
	EQUIPMENT	(442)	(398)	(357)	(316)	33	151	33	42	191	468	989	936	873	828	772
CUMULATIVE D.C.F.	(442)	(840)	(1197)	(1513)	(1480)	(1329)	(1296)	(1254)	(1036)	(595)	394	1330	2203	3031	3803	
D.C.F. INCLUDING INFLATION (AT 6%)																
	STAFF	(468)	(446)	(423)	(396)	44	213	49	66	318	825	1844	1847	1822	1829	1806
	EQUIPMENT	(468)	(914)	(1337)	(1733)	(1689)	(1476)	(1427)	(1361)	(1043)	(218)	1626	3473	5295	7124	8930

FIGURE 22



1. Year 1

The legal improvement package requires a relatively small investment (\$328,000) for implementation. It produces large and immediate returns. It should be the first improvement package implemented. In the first year of the program, it requires funding of only \$120,000. The remaining \$380,000 can be directed towards preliminary work on the other improvement packages. These funds are sufficient to complete the first year development and testing activities for all packages as shown in the detailed cost/benefit sheets for the minimum implementation time approach.

2. Year 2

The \$500,000 funding of Year 2 would be used to complete the development and pilot project testing of the legal system improvements. Since a benefit stream from legal improvements is realized in Year 2, a net cost of \$70,000 is required to complete this activity. Thus, \$430,000 is available for implementation of the other packages.

Both the microfilm systems and the certification program would be ready for implementation at the beginning of the second year. The computerization and information reporting packages are still in the development and testing stages. The available funding must be allocated between these four improvement packages.

Both the microfilm and certification packages have relatively short implementation times. Computerization has a relatively long implementation period, but it provides the greatest reduction in workload in the local offices. Its implementation should not be delayed excessively. Therefore, the development expense for computerization and information reporting scheduled for Year 2 in the minimum implementation time approach should be completed. This requires expenditure of \$268,000. The remaining \$162,000 can be used to implement the microfilm systems in one local office and complete the certification program in eight local offices.

3. Year 3

In Year 3, funding of \$500,000 and a net benefit of \$532,000 (from legal improvements) are available. The certification program can be completed in an additional eight offices for a total of sixteen. The microfilm systems can be extended to an additional sixteen offices, for a total of seventeen.

This leaves sufficient funds to complete the development work for both computerization and reporting. In addition, the pilot project testing for computerization is completed during this year. This means that the property maps and computer equipment for one office in one region will be installed and operating by the end of Year 3.

4. Year 4

This is the last year in which funding of \$500,000 is made available. This, coupled with benefits of about \$800,000 from legal, certification and microfilm implementation programs, produces an available funding of about \$1,300,000.

Certification can be completed in an additional eight offices, for a total of 24. The microfilm system can be extended rapidly. An additional 28 offices, for a total of 45, can have microfilm equipment installed.

Development and pilot project activities for the information reporting systems can be performed as scheduled in the minimum implementation time approach. A further two offices, for a total of three, would have property maps and local office computer equipment in place.

The first regional computer configuration, installed as the pilot system, would now be processing information for a total of three offices. The small pilot project configuration would no longer be adequate. Therefore, some additional capability must be added to this first regional computer during Year 4.

5. Year 5

This is the first year in which no additional funding is available. All implementation activity must be financed from savings generated by improvements already in place. On this basis, a total of about \$900,000 is available.

In Year 5, certification is completed in another eight offices. About half the Province (32 offices) will have been completed by this time. The microfilm system is extended to another 14 offices, for a total of 59.

The development and pilot project activities for information reporting are completed in Year 5. The remaining four offices in the first computer region are provided with property maps and local office computer equipment. The first regional computer system is, therefore, fully operational and supporting seven offices by the end of the year.

6. Year 6

The benefit streams produced by the installed improvement packages produce about \$1,200,000 to fund the implementation activities for Year 6.

Certification proceeds in another eight offices for a total of 40 offices completed at the end of Year 6. The remaining six offices are converted to the microfilm systems, completing the microfilm program this year.

The conversion effort now concentrates on computerization of the offices. The reporting systems can be implemented for the first regional computer. A second regional computer system can be installed and all offices in that region provided with property maps and local office computers. A third regional computer system can be purchased. It will be needed for the major conversion effort in the succeeding years.

7. Year 7

Approximately \$1,600,000 in benefits is available for funding improvements this year.

Certification is completed in another eight offices, for a total of 48 by the end of the year. Property maps and local office computer equipment will be in place in a third region. Information reporting for the second and third regional systems can also be installed. This provides a sufficient volume of transactions to verify the suitability and usefulness of the information reporting systems.

Extension of information reporting would be dependent upon the volume of user requests. For costing purposes, conversion of one reporting region per year has been assumed from this time on.

Near the end of the year, the regional computer system equipment for the fourth region would be purchased.

8. Year 8

A benefit stream of about \$1,900,000 is available to fund the improvement program. Certification is completed in eight more offices. The fourth and fifth regions would have property maps and local office computer equipment. The computer equipment for conversion of the sixth region would be purchased. Information reporting would be implemented in the fourth region.

9. Year 9

A benefit stream of about \$2,400,000 is available in Year 9.

The certification program is completed this year. The sixth and seventh regions would be computerized and the equipment purchased for the eighth region. Reporting is installed in the fifth region.

10. Year 10

About \$2,700,000 in benefits has been generated by installed packages.

The last two computerized regions are installed this year. Information reporting for the sixth region is installed.

By this year, the benefit stream realized from improvements has not only repaid the initial \$2,000,000 investment but also broken even in terms of implementation expense. In all subsequent years, the program will provide a net benefit of increasing magnitude.

11. Year 11

By Year 11, the improvements, with the exception of information reporting, have been completed. Some work also remains in adding the last 30% of properties to the property mapping system. This program is not complete until Year 14. The information reporting systems are not fully complete until Year 13.

However, increasing benefit streams are being realized from this point on. As is evident from the financial analysis, implementation of the improvement packages is cost justified. On a discounted basis, including inflation, break-even and return of the initial \$2,000,000 funding is completed in Year 11. Over the 15-year analysis period, a discounted return of about \$9,000,000 is obtained.

The proposed implementation strategy is financially attractive. It is also attractive from the standpoint of implementation planning. The legal improvements are implemented quickly. Microfilm systems are tested in one office and then implemented quickly throughout the Province. A certification team is established to perform certification in the registry system at the constant rate of eight offices per year. Computerized systems are developed and tested thoroughly in a few offices before being rapidly extended throughout the remainder of the Province. The logistics of this implementation strategy are easily controlled and within the Division's capabilities.

One further aspect of implementation strategy must be considered. This is the commitment to carry through a program once it has been started.

Flexibility of commitment takes two forms. The first is the ability to return to a previous method once a change has been initiated. The second is the ability to control the rate at which expenditures are made in implementing the program. Both factors must be considered in evaluating the implications of making improvements.

After implementation of the microfilm systems, a return to the paper system would be difficult. Much of the microfilm benefit is achieved by the removal of paper documents and plans from the local office. Recognizing this degree of commitment, the microfilm systems are implemented only in a few offices during the initial stages. For all other improvements, a reversion to the present system is possible.

The rate of expenditure can be controlled for all systems improvements. However, in practical terms, the legal system improvements do not offer this flexibility. Legal development costs are low. Implementation is on a province-wide basis. The benefits to system users and operating staff are substantial. It would serve no purpose to attempt to implement the legal improvement package on a gradual basis.

The expenditures for all other system improvements can be easily controlled. The microfilm and computer-based improvements incur expense based on the number of offices converted each year. These expenses can be controlled by controlling the rate at which offices (or regions) are converted. The certification expense is a function of the size of the team performing certification. This can be controlled, but it is unlikely that an expense of less than \$66,000 per year would be practical as a formal improvement program. Of course, certification could be performed on an informal, as-time-is-available, basis by local office staff.

Experience suggests that system users would welcome implementation of the legal, certification and information reporting packages. All represent significant and highly visible improvements.

Similarly, implementation of a computerized index should be welcomed by the users. This improvement involves little major change to the basic procedures for using the system. The changes which are visible to system users provide faster and more accurate information. The major procedural and operating changes are behind the counter and have little apparent effect on the user environment.

The one area where user resistance is conceivable is implementation of the microfilm systems. This represents a change to existing and familiar user procedures. A period of user adjustment will be required. However, experience in the Toronto and York South office indicates that user acceptance will be obtained. Proper introduction of the change will be necessary to demonstrate:

- the equipment;
- the procedures for locating documents;
- the speed at which copies can be provided; and
- the resulting benefits for both system staff and users.

A "model" office containing all regional and local office equipment should be set up during the development and testing stage. This model office system would be used to test all functions of the system prior to actual installation in an office. Of course, it can also be used to demonstrate operation of the new system to staff and the users. In this way, it could serve to assist in the introduction of each improvement.

K. ORGANIZATION, STAFFING AND FUNDING CONSIDERATIONS

Currently, the land registration system is organized on a local office, regional processing and central head office basis. This basic organizational structure is consistent with the improvement packages proposed.

Central head office functions would remain essentially as at present. Centralized computer systems have not been recommended. Changes to existing head office functions are not required. However, on a temporary basis, development and implementation groups would be added to the central organization. This staff cost has been considered in the cost/benefit analysis. Space requirements have not. However, space is not a significant factor and would not produce a noticeable effect in the analysis. The actual cost of space will vary. It depends upon the packages to be implemented and whether purchased or staff services are to be used.

Space will be required for regional centre equipment and staff. It has been determined that sufficient space would become available in each office selected as a regional centre to house the required regional centre equipment and staff as a result of implementation of the proposed improvement packages. Thus, no additional office space is required for the establishment of regional centres. However, new skills and responsibilities are associated with the required staffing. Training and staffing costs for regional centres have been included in the development of cost figures.

Local office space and staff requirements would be reduced. Microfilm and computer equipment would eliminate many of the existing clerical duties in the office. The system users would have more direct access to information. Therefore, they should be more self-sufficient. The need for trained counter staff would continue. The need for less skilled clerical complement and contract positions would diminish.

Local office staff would have a significant involvement in the implementation of improvements. The searching for completion of property mapping would be performed in the local office. No additional staff is required for this activity. Time-savings in terms of part positions, not recognized in the analysis of benefits, are sufficient to allow office staff to perform this function. Staff savings are also sufficient to cope with growth in registration volume over the 15-year implementation period without complement additions.

This analysis is more meaningful when compared to the total operating cost and revenue of the land registration system. Figure 23, page 93, illustrated the actual and projected costs and revenue from the land registration system for the years 1971 through 1991. Projected operating costs increase during the first three years of implementation. Thereafter, there is a significant decrease.

The projected revenue based on the current fee schedule increases substantially in relation to the projected operating costs. In addition, revenue from additional services can be expected. This has been projected and further increases the difference between operating costs and revenue.

It should also be noted that an increase of about \$1.00 per registration could entirely fund the development and implementation of the proposed system improvements. This modest fee increase would generate revenue in excess of \$1,000,000 per year over the life of the project. Alternately, the Province could choose to increase fees coincident with installation of improved services. Again, the costs incurred would be more than offset by increased fee revenue.

FISCAL YEARS

71

73

75

77

79

81

83

85

87

89

91

REVENUES FROM ADDITIONAL SERVICES
CURRENT FEE SCHEDULE

PROJECTED

OPERATING COSTS

PROJECTED

OPERATING COSTS ILLUSTRATING
THE EFFECT OF IMPROVEMENT

ACTUAL

FIGURE 23

PROJECTED OPERATING COSTS AND REVENUES

VI

THE IMPROVED LAND REGISTRATION SYSTEM AND THE LAW REFORM COMMISSION REPORT ON LAND REGISTRATION

A. THE MAJOR LAW REFORM COMMISSION RECOMMENDATIONS

The general summary of recommendations of the Ontario Law Reform Commission Report on Land Registration (1971) is reproduced in Appendix A. It is taken directly from Chapter X (pages 80 - 84) of the Commission's report.

The major recommendations of this report were:

- an improved land titles system should be the sole system for land registration in Ontario;
- with limited exceptions, claims against land should be registered to be effective;
- a coordinate control system should be established and used for indexing parcels and to record the location of monuments; and
- a computer system should be used for land registration.

This report has documented the Ministry of Consumer and Commercial Relations' position regarding an improved land registration system. It would not be complete without a comparison of this proposed system to the Commission recommendations.

In general, the improved system satisfies many of the Commission recommendations. The major area of difference is continuation of the registry system.

B. CONTINUATION OF THE REGISTRY SYSTEM

In Chapter III of their report, the Commission recommends that an improved land titles system should be the sole system for land registration in Ontario. This report recommends improvement of both the land titles and registry systems without an immediate conversion from one to the other.

The decision to convert from the registry to the land titles system must be based on a comparison of the costs and characteristics of both. However, both systems can be improved substantially. The proposed improvements result in systems that are similar in most respects. The information required to properly compare the two systems will not be available

until after these improvements are made. Therefore, this report does not agree with the recommendation in the Commission report that no substantial changes be made to the existing systems pending the adoption of an improved system.

At least in the short term, the Province should continue to maintain two systems. If, after improvement, one system proves clearly superior, all land in the Province can be brought under that system.

Since operation of both systems will be quite similar in the future, the conversion process will be simplified. The upheaval and expense of converting to another system at this time is avoided.

C. OTHER COMMENTS ON THE LAW REFORM COMMISSION
RECOMMENDATIONS

Many of the Law Reform Commission recommendations assume that a land titles system will be the sole system for land registration in Ontario. Some of the recommendations are inappropriate for an improved registry system. Therefore, this report is at variance with the basic recommendation of Chapter III of the Commission report.

However, the recommendations in Chapters IV through IX are in general agreement with this report's recommendations. Comments on each Chapter of the Commission report follow.

Chapter IV describes the basic legal framework of the improved land registration system. These characteristics are largely preserved in this report although, as was noted, some are inappropriate to the registry system. In particular, this report accepts the principle of priority of registration expressed in recommendation 10.

Chapter V of the Commission report discusses claims which need not be registered. This report has gone further in reducing the number of claims which need not be registered on title. Recommendation 7, which provides for a separate writs of execution index, has been replaced by a requirement to register writs against specific land parcels. Registration of writs eliminates the need for conducting a separate search of the writs of execution file as described in recommendation 8. Similarly, this report recommends the registration of zoning by-laws against individual land parcels rather than the maintenance of a separate index as suggested in recommendation 9. Recommendation 11 of the Commission report is considered to be the minimum acceptable solution to Planning Act subdivision control violation problems. This report recommends the levy of a substantial fine and removal of the title effect as a more satisfactory solution.

Recommendation 12 would not allow adverse possession in the land titles system. This report considers the lack of an adverse possession concept to be a serious deficiency of that system. Therefore, it is recommended that adverse possession be allowed for abandoned land under certain conditions and also for boundary encroachments.

Recommendations regarding land descriptions and boundaries are covered in Chapter VI of the Commission report. This report agrees that the coordinate control system should be used for descriptions of land parcel boundaries. However, a block parcel number rather than a geographic identifier should be used as the basis for indexing land parcels. Property maps will show the approximate size and location of each land parcel. The identifier will serve as the description of the land parcel. Since no description conflicts can arise, this report does not accept Commission recommendation 5.

Commission recommendation 7 is not carried forward. The ability to accept and store precise location information will exist in the recommended system. However, it is not intended to offer affirmation of precise location. The resolution of problems in this area would be a function of the court or an independent tribunal.

Records management is dealt within Chapter VII of the Commission report. The choice of a centralized computer with remote terminals in local offices is at variance with the recommendations of this report. However, the choices differ only in methodology and not in eventual result. The cost/benefit analysis of this report has demonstrated that local and regional computerization is more cost effective than a centralized computer configuration and that courier service is preferable to telecommunication links. Further, the index used for the computer system would be based on the block parcel number. The geographic index derived from coordinate values would be used solely as an internal attribute of the land registration system.

Chapter VIII, Conversion, deals primarily with conversion from the existing systems to an improved land titles system. As such, some recommendations are inappropriate. However, the general sequence outlined for implementing improvements is similar to that recommended in this report. Recommendations 4 and 5 specify the procedures for abolishing unregistered government liens and the need for compensation in the event that interests are extinguished by conversion. This report is also in agreement with those recommendations.

Chapter IX of the Commission report contains four specific recommendations. Recommendation 1 has been largely carried out to-date. No substantial changes have been made to either the registry or land titles system for a number of years. Of course, this report recommends substantial changes and modernization of both systems.

This report agrees with recommendation 2 and does not promote the introduction of title insurance. Recommendations 3 and 4 deal with expansion of staff and improved communication with system users. Both recommendations were already implemented prior to the writing of this report.

D. CONCLUSION AND RECOMMENDATIONS

The detailed recommendations of this report are found in Appendix B, Recommendations for an Improved Land Registration System for Ontario. The major recommendations have already been discussed in the foregoing comparison to the Ontario Law Reform Commission report.

Financial analysis of implementation of all five proposed improvement packages demonstrated a pay-back period between 9 and 11 years based solely on system savings. However, consideration should also be given to the impact on system users and other government agencies.

A number of potential benefits to other government agencies and system users were quantified in the cost/benefit analysis. On an annual basis, the user savings from implementation of each package are as follows:

- legal system improvements, \$7,150,000;
- microfilm document and plan systems, \$50,000;
- certification in the registry system, \$750,000;
- computerized indexes, property maps and activity reports, \$2,865,000; and
- selective and aggregate information reports, \$50,000.

It should be noted that these reflect only those benefits which could be quantified. Other potential savings were identified but could not be quantified. For example, the elimination of duplicate property information and maps maintained by other agencies should result in additional annual savings of over one million dollars. However, the information necessary to quantify these savings was not available and is not included in these estimates.

Based on the system cost/benefit analysis and the utility to system users, this report recommends implementation of all five improvement packages in the following order:

- legal system improvements;
- microfilm document and plan systems;

- certification in the registry system;
- computerized indexes, property maps and activity reports; and
- selective and aggregate information reports.

APPENDIX A

ONTARIO LAW REFORM COMMISSION

REPORT ON LAND REGISTRATION (1971)

CHAPTER X: GENERAL SUMMARY OF RECOMMENDATIONS

APPENDIX A

ONTARIO LAW REFORM COMMISSION REPORT ON LAND REGISTRATION (1971) CHAPTER X: GENERAL SUMMARY OF RECOMMENDATIONS

A. INTRODUCTION

This study was initiated to respond to the recommendations of the Ontario Law Reform Commission Report on Land Registration. Chapter X (pages 80-84) of that Report provides a general summary of the Commission's Recommendations. For reference, it is reproduced below.

B. O.L.R.C. RECOMMENDATIONS

The Choice of the General System - Chapter III

The Commission recommends that an improved land titles system should be the sole system for land registration in Ontario, and should be called the "Land Registration" system.

The Land Registration System - Chapter IV

The Commission recommends that:

1. The existence and ownership of the fee simple absolute, charges, leases (subject to the limitations on length of terms of leases in the existing land titles system), and easements should be affirmed.
2. The owners of claims for which affirmations of existence and ownership are not to be made should be able to register the documents that create their claims.
3. Owners of charges, leases, and easements should be able to register documents that create their claims, without having affirmations made.
4. The owners of claims should be able to register cautions.
5. If any interest for which an affirmation of existence and ownership is not made is created in a registered document and is terminated or appears to be terminated, an affirmation should be made that the interest is terminated.
6. A power to rectify affirmations in appropriate situations should be given.

7. Compensation should be paid for interests that are extinguished by making affirmations without the consent or fault of the owners.
8. With two exceptions the compensation should be unlimited and should represent the value of the interest. The two exceptions are: (1) claims that secure the payment of money should be limited by the value of the land less the value of any prior claims; and (2) the substance of the existing limitation for interests in the land that derive their value from minerals should be preserved.
9. The arrangements for future claims, trusts and concurrent interests in the existing land titles system should be preserved until reports are made about the basic principles of real property law, and trusts.
10. Registration should give priority over unregistered claims or claims registered later, except that registration should give priority over a claim created before the creation of the registered claim only if the registered claim was acquired for value and without fraud.
11. The protection for the priority of short-term leases in the existing land titles system should be continued.

The Claims that Need not be Registered - Chapter V

The Commission recommends that:

1. The liens of the government against specified parcels should be registered to be effective, except the lien to secure payment of municipal taxes and any other debts that are secured and collected through this lien.
2. The liens of the government against all land owned by a debtor should be abolished, except the liens to secure payment of corporations tax and succession duty.
3. The lien to secure payment of corporations tax should secure debts of only current owners in the land registration system.
4. The liens to secure payment of succession duty should secure only duty levied after the death of the current owner in the land registration system.
5. The lien to secure payment of corporations tax should extend only to the fee simple in the land registration system.

6. Consents from the Department of Revenue should be required for a transfer in the land registration system of any interest that is affirmed and that may be subject to the lien to secure payment of corporations tax or the lien to secure payment of succession duty. If a lien is claimed against the current owner, the transfer may be made, but subject to the lien, and the lien should be recorded against the parcel.
7. Writs of execution should secure debts of only current owners in the land registration system, and should be delivered to the appropriate office to be effective.
8. A search should be made at the time of each transfer in the land registration system to ascertain whether writs of execution exist against the owner. If an execution exists against the owner, the transfer may be made but subject to the execution, and the writ of execution should be recorded against the parcel.
9. All by-laws passed under section 30 of The Planning Act, and similar by-laws, must be registered to be effective. These by-laws need not be indexed against any of the parcels affected, but must be kept consolidated and in a reasonably usable form.
10. Any order made by any government department to make changes in land or buildings that includes remedies affecting the land or buildings, and not the owner personally, must be registered to be effective against a bona fide purchaser for value.
11. The affirmations of ownership in the land registration system should include an affirmation that a violation of section 26 of The Planning Act does not deny the ownership.
12. Claims against land governed by the land registration system may not be acquired or extinguished by adverse possession.
13. The policy whereunder rights acquired under The Expropriations Act, 1968-69 are registered against parcels governed by the existing systems should be continued under the land registration system.
14. Statutes containing provisions under which the present and future use and value of land may be affected by an agreement between the owner of the land and the government, should contain a provision, to the effect that the agreement shall not be binding upon the original owner's successors in title unless registered.

Descriptions and Boundaries - Chapter VI

The Commission recommends that:

1. A co-ordinate control system should be established.
2. The extent, design, installation and cost of the system should be determined and shared by the prospective users.
3. The system should be used for indexing parcels and to record the location of monuments; the possibility of use of the system for creation of boundaries by the specification of co-ordinates alone should be explored through more analysis and experimentation.
4. Controls of the general nature used in the existing land titles systems over descriptions, plans and surveys should be continued in the land registration system.
5. Affirmations that no conflicts appear from the terms of other descriptions should be made for all descriptions in the land registration system.
6. Affirmations of the location of boundaries should be an ultimate objective of the land registration system.
7. Affirmations of precise location should eventually be made for most boundaries created in the future and for some existing parcels.
8. Affirmations of approximate location should eventually be made for most existing parcels.

Registration of Title to Land as a Problem of Management of Records - Chapter VII

The Commission recommends that:

1. A computer system should be used for land registration. The major elements of this system are:
 - (a) a record for each parcel should be stored in a central computer. This record should include the name of the owner, and references to the description and current documents. The record should also include, as supplementary information, the date, names of parties, and kind of each current document, and summaries of the terms of payment of charges;
 - (b) the records in the computer should be available in local offices through remote terminals;

- (c) the descriptions and microfilm reproductions of the registered documents should be stored in the local offices;
 - (d) registrations should be made at the local offices for the parcels that are affected;
 - (e) the microfilm reproductions and the changes in the record stored in the computer should be made at a central office; and
 - (f) copies of descriptions and documents for searches should be obtainable by mail.
2. An index that is derived from co-ordinates and designed in co-operation with other prospective users should be used.

Conversion - Chapter VIII

The Commission recommends that:

1. The initial stage of conversion to the land registration system should be composed of,
 - (a) the conversion to the affirmations of title;
 - (b) the conversion to the affirmations of descriptions;
 - (c) the limitation of the liens to secure payment of corporations tax and succession duty and writs of execution to liens against current owners only;
 - (d) the preparation and conversion to the co-ordinate index and the index maps; and
 - (e) the conversion to the computer system.
2. The province should be divided into areas, to be specified by administrative determination, and this initial stage of conversion should be done for all the parcels in each area at the same time.
3. Conversion to affirmations of the location of boundaries should be made during this initial stage only for parcels for which the existing information is adequate. For the remaining parcels, these affirmations should be made later, and only when justified by need and cost.
4. The government liens against specified parcels and the liens against all land owned by a debtor that are to be abolished, should be abolished throughout the province after a reasonable warning period.

5. Compensation should be paid for interests extinguished by conversion, except the liens of the government.

The Registry System, Title Insurance and The Structure of Government - Chapter IX

The Commission recommends that:

1. Because of the recommendations made in this report for the adoption of a new system of land registration, no substantial changes should be made to improve the existing registry and land titles systems pending the adoption of the new system.
2. The use of title insurance should not be encouraged and should not be an element of improvements made in land registration.
3. The executive staff of the administrative staff for land registration should be greatly expanded.
4. The executive staff should have more extensive and permanent arrangements for communication with the legal profession.

APPENDIX B

RECOMMENDATIONS FOR AN IMPROVED LAND REGISTRATION SYSTEM FOR ONTARIO

Recommendations for improvement of the land registration system have appeared throughout this report. For reference, they are consolidated in this Appendix. The governing recommendations are:

- the Province should retain responsibility for land registration;
- both the registry and land titles systems should be retained, at least in the short term;
- both systems should be improved to the extent possible;
- a single system for land registration should be used only if, after improvement to both, one system proves clearly superior; and
- five improvement "packages" should be implemented.

A. THE CONCEPT OF IMPROVEMENT PACKAGES

Introduction of many of the potential improvements depends upon prior implementation of other changes. For example, computerization of land parcel information is practical only after assignment of unique parcel identifiers. This constrains the order in which improvements can be made and leads to combinations of dependent improvements.

Dependent improvements have been grouped into related "packages". Five major improvement packages are recommended:

- legal system improvements;
- microfilm document and plan systems;
- certification in the registry system;
- computerized indexes, property maps and activity reports; and
- selective and aggregate information reports.

The specific improvements to be implemented within each package are identified in the remaining sections of this Appendix.

B. LEGAL SYSTEM IMPROVEMENTS

Legal system improvements benefit both system operation and system users. This improvement package should be implemented immediately.

A number of significant changes to present practices and procedures will result. Both system staff and users must be aware of these changes. Detailed procedural guides and user manuals covering every aspect of system operation should be provided. This will ensure uniform practices and procedures in all local offices.

A number of changes to the registry system are recommended:

- as a minimum, the search period should be reduced to 40 years or the first prior independent conveyance if none have been registered in the intervening period; and
- immediate effect should be given to discharged and expired interests.

Land titles legislation should be improved to clarify the provisions dealing with cautions, notices and leases.

A number of improvements apply to both systems. The general law regarding restrictive covenants and easements should be clarified and improved. A more complete title and survey record should be provided in both systems. Therefore, the number of unregistered government liens should be reduced. Specifically:

- specific government liens, with the exception of municipal taxes, should be registered to be effective; and
- general government liens, except for corporations tax and succession duty, should be abolished.

Succession duty and corporations tax should apply only to the last owner. Corporations tax clearance should be required for every conveyance by a corporate owner.

The title effect for violation of the subdivision control provisions of The Planning Act should be removed and replaced by a substantial fine. Violation of municipal set-back and side lot clearance by-laws should be registered to be effective.

In order to provide a more complete survey record, all plans relevant to ownership and conveyancing should be registered. Field note information should be incorporated in all survey plans entering the system. Use of the Ontario grid system

coordinates should be mandatory for all plans in areas where evaluated control stations are present in sufficient density. The use of coordinates should be encouraged throughout the Province.

Shorter standardized forms are also recommended. This involves:

- the use of a standardized cover page containing all abstract-related information;
- shortening the legal content of documents and providing standardized wording;
- eliminating some obsolete concepts such as personal seals; and
- eliminating many affidavits.

In both systems, the rules governing assurance and compensation should be clarified and improved. The following affirmations should be provided:

- proper recording, in both systems;
- proper completion, in both systems;
- proper execution, in the land titles system only;
- legal effectiveness, in the land titles system only; and
- useful existence, in both systems.

Neither system will provide an affirmation of precise location. However, the system will be capable of accepting information defining the precise location of boundaries.

Compensation should be paid according to assurance offered. It will be paid on a more comprehensive basis. The principle of a compensation fund should be extended to the registry system. The amount in the fund should not be the total liability of the government. Amounts exceeding the value of the fund should be paid out of general revenues. However, the compensation paid for any individual claim should be limited to three times the value of the surface rights alone.

Normal procedure should be to attempt recovery from the party, if any, who caused the loss. This requirement should be waived where such a party is judgement-proof.

Adverse possession should be allowed in the land titles system for:

- abandoned land, under certain conditions; and
- boundary encroachments.

A number of other improvements would provide better and faster service. Same-day registration should be ensured for simple, straight-forward documents. This could not be guaranteed for complex documents. However, a pre-approval process for complex documents should be instituted to allow registration to occur on the required day. "Retroactive" registration in the land titles system should be discontinued.

C. MICROFILM DOCUMENT AND PLAN SYSTEMS

Paper records for both documents and plans should be removed from the local offices. Microfilm should be used in their place.

Three regional microfilm centres are recommended to provide microfilm services and support for local offices. Two types of microfilm would be processed. Documents would be stored on 16 mm microfilm. Plans would be stored using 35 mm microfilm.

Document microfilming should continue to be done in the local offices. Plan microfilming should be performed in the regional centres.

For documents, roll film cartridges and high speed readers should be used in the local offices. The approximate location of documents would be indexed on each cartridge. However, paper copies of the microfilm images would be provided at no charge from the microfilm readers.

Paper copies of plans would be made from plan microfilm records at the regional centres. However, each office would be provided with a microfiche viewer/printer in the event that copies of portions of plans are required and white prints are not available.

Once original plans and documents are microfilmed, they should be removed from the office or destroyed.

D. CERTIFICATION IN THE REGISTRY SYSTEM

All new plans of subdivision entering the registry system should be certified using the present Certification of Titles Act. All areas of the Province to which the land titles system has not been extended should be designated as certification areas. New subdivisions would then enter the land titles system in areas where it is available or be certified in areas where only the registry system is available.

Recently registered plans in the registry system should be certified by the government. A statement of ownership at the time of registration and encumbrances outstanding at the time of certification should be provided.

E. COMPUTERIZED INDEXES, PROPERTY MAPS AND ACTIVITY REPORTS

This is the most important area of change in the operating system. It involves computerization of land registration information and automation of the local offices.

Computers would be used to maintain property maps and produce index records and activity reports. As a first step, property maps for a local office should be produced on a computer. Automated processes should be used for both production of initial property maps and updating of existing maps on an on-going basis.

Property maps should have the following characteristics:

- all registered land parcels should be shown;
- the parcels shown must exist on the ground;
- the relative location of a parcel to its neighbours must be correct;
- a land parcel illustration (to scale) should have approximately the size and configuration of the property on the ground; and
- map parcels should be related to the ground through the Ontario Coordinate Grid System.

Property mapping would be performed in nine regional centres. There are four major stages to automated property map preparation and maintenance:

- development of the necessary hardware and software techniques;
- pilot project testing by preparation of complete property maps for one medium-sized office;
- relatively fast conversion of the initial 70% of land parcels for an office; and
- verification of the descriptions of all parcels and conversion of the remaining 30% as soon as possible thereafter.

Digitizing of boundary information should be used for initial map preparation. Direct data entry should be used for subsequent updating of property maps. Much of the initial data capture can be subcontracted to outside agencies. Where suitable maps are available from other agencies, such as the Ministry of Revenue, they should be used in initial map preparation.

As part of property map preparation, unique land parcel identifiers should be assigned. A block parcel number should serve as the unique identifier. The block parcel identifier would be derived as follows:

- the external boundaries of the Province would be defined using Ontario grid system coordinates;
- within this framework, the boundaries of counties, local office areas and townships would be defined;
- within township, blocks based on natural features such as roads, rivers and railways would be defined; and
- the Ministry of Transportation and Communications transportation network geocode would be used to define these natural features.

Each land parcel within the block would be fitted into the overall block framework. This would be accomplished by a "rubberizing" process on an interactive graphics terminal. Each land parcel within the block would be assigned a unique number. The land parcel identifier is, therefore, composed of a block number unique within the Province and a parcel number unique within the block. Assignment of a unique land parcel identifier then allows the remaining computerized information to be organized on a land parcel basis.

Since the property mapping information is based on the Ontario grid system coordinates, each land parcel is directly related to the ground. Its boundaries have geographic significance. The approximate centre of each land parcel can be identified. This geographic coordinate (the geocentre) should be captured and used as an internal identifier to allow retrieval of information by geographic area.

Up-to-date property maps should be maintained in the regional centre. After a substantial number of updates, a revised property map would be forwarded from the regional centre to the local office. In the interim, pencil updates would be made to the property map in the local office. The most current state of land division should always be reflected in the local office property maps.

Plan examination should be carried out primarily by local office staff. Three types of plan evaluation should occur:

- examination for completeness of submission;
- examination for accuracy of calculations; and
- examination for conformity to survey practice.

The examination for conformity to survey practice involves five levels of examination:

- limited checklist;
- technical evaluation;
- general evaluation;
- in-depth examination; and
- field examination.

Only the examination for accuracy of calculations, field examination and in-depth examination would be performed in the regional centre. Plan data capture would also take place in the regional centre as part of the examination for accuracy of calculations.

On completion of property mapping for the local office, local office automated systems can be installed. Each office would be equipped with an intelligent cash register, enquiry pads, data entry terminal, local disc and tape files and a mini-computer processor.

The local files would contain information for each land parcel within the jurisdiction of the local office. The cash register would be used to update the local files so that these would always reflect registrations which have occurred since the last updating of index pages.

The data entry terminal would be used to capture abstract entry information from document and plan cover pages. This information would be forwarded to the regional centre where printed index pages would be produced and returned to the local office.

Local office enquiry pads would be used to enquire into local office files. Since the local office files are updated as registrations are processed through the cash register, the enquiry pad displays the effect of a registration immediately after a registration number has been assigned by the cash register.

A cover page file for subsearching would be available at the front counter. Registration numbers displayed on the enquiry pads would lead the system user directly to the cover pages affecting the land parcel being searched. Subsearching will be simplified since the block parcel number will be used both as the legal description on the cover page and for enquiry purposes.

Computerization allows implementation of new services and procedures. Deposit and charge accounts would become practical and would simplify the financial arrangements for

both office staff and system users. Internal reports dealing with system activity could be produced at the regional centre to assist in operational control. Finally, requests for service by telephone or mail could be accommodated.

Access to computerized land registration information must be controlled. Access to individual land parcel information can remain open as at present. Access to the complete information files should be restricted.

F. SELECTIVE AND AGGREGATE INFORMATION REPORTS

This last series of recommendations deals with introduction of new services.

To simplify the use of the system and assist judgement creditors in locating land interests of their debtors, a number of cross-reference indexes should be provided. These would reference the land parcel identifiers to:

- owner names;
- street addresses; and
- former legal descriptions.

Judgement creditors should be further assisted by providing a recording system which would notify a creditor whenever a person with a name similar to his debtor acquires an interest in land. Additional information such as sex and birth date should also be required on cover pages to allow easier identification of judgement debtors. After implementation of these improvements, registration of the writs against particular land parcels would be required.

The system should also have the capacity to manipulate large amounts of property map and title information. This should include selective reporting ability. These improvements should provide:

- the ability to select information by geographic area;
- the ability to perform statistical analysis; and
- the ability to combine geographic and title information in either printed or map form.

Once system information is computerized, machine-readable information can be supplied to other agencies. Requests for information can be serviced on an overnight basis. Printed information such as cross-reference indexes would be supplied in the form of monthly updates and yearly consolidations.

The cost of these new services could be easily recovered by imposition of a very modest fee structure. In fact, the demand for this information should be sufficient to generate substantial revenue.

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